

The Editor,
Yellowknife.

Re: Water Filtration For Yellowknife

The current water transport and treatment system for Yellowknife needs replacement. To comply with NWT legislation, the City of Yellowknife must add filtration capacity to any new water treatment plant. This legislation was prompted, but not required, by national water treatment guidelines advising filtration of all surface municipal drinking water sources. As the estimated cost of this facility has risen over the past four years from 10 to 30 million dollars, a critical second look at this requirement is in order.

Filtration is designed to remove silt from drinking water. Silt can carry bacteria, which can cause human illness. Chlorine treatment kills bacteria and is adjusted according to water turbidity (cloudiness). Removing silt reduces the amount of chlorine needed to disinfect turbid water. In areas at high risk of contamination, filtration can also reduce the likelihood of waterborne illness. However, Canada is a large country, with a wide variety of surface water sources. Snow melt in a forest watershed poses far less risk of illness than rain run-off from cattle farms. Agricultural run-off has caused outbreaks of bacterial waterborne illness in places such as Walkerton and North Battleford. It was in response to these outbreaks that national filtration guidelines were drafted; however, it is overly simplistic and inefficient to expand such a guideline to settings with lower levels of risk.

There has never been a case of illness caused by municipally treated water in Yellowknife. In the last decade, there has been one occasion of marked turbidity requiring a boil-water advisory due to a landslide on the Yellowknife River. Yellowknife's current water is clean and poses negligible risk to human health. Although clearer water would be nice, it will not be measurably safer. Should we spend millions of dollars to comply with a guideline that was written primarily to address elevated risk of waterborne illness from agricultural run-off?

Perhaps 15 of the currently projected 30 million dollar budget is for filtration; the other half is for pump infrastructure and chlorine treatment. Operating and maintenance costs for the filtration component will be close to 2 million dollars annually. This represents approximately \$3000 per Yellowknife household capital cost and \$400 annual costs thereafter. If there is a significant risk to be avoided, the

cost may be justified. However, the evidence to date demonstrates that there is minimal risk.

In medicine, guidelines are used frequently. They are not rules. A clinician must decide whether a given guideline is applicable to a particular patient in a given setting. If not, the guideline may not be valid and may need to be ignored. The GNWT has the discretion to adopt the national guideline or not. That decision should be based on a thoughtful assessment of the magnitude of risk posed by our current water system and the cost of avoiding that risk.

Fifteen million dollars spent on medical travel saves dozens of lives annually and improves the quality of hundreds more. Spent on filtration of an already clean water source, it won't avoid a tummy ache. Is this not a waste when there are so many other pressing needs for our before- and after-tax dollars? And to what alternate use could the City of Yellowknife put the 2 million dollars needed annually to operate and maintain the filters?

Risk management does not mean avoiding negligible risk at any cost. The NWT legislation requiring filtration in Yellowknife's new water treatment plant needs to be reviewed openly and objectively, with involvement of the City ratepayers, not just the Territorial regulator. Unless there is a compelling risk to be avoided, the price tag of filtration is too steep, and the status quo should be maintained. Alternately, the middle of Yellowknife Bay could provide an economical natural source of less turbid water that is verifiably not contaminated with arsenic.

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Yellowknife