



Northern Watertek Corporation

200 Commerce Road, Vars, ON, Canada K0A 3L0

Tel: (613) 443-1118, Fax: (613) 443-2527

www.watertek.org

MEMO

DATE: February 19, 2003
TO: Lynne Maclellan et. al. (XCG Consultants)
FROM: Jeff White

The assessment by XCG of the original Munster proposal by Delta/NWC has been hampered by timing and posturing by several parties, including NWC, City officials, et. al.

A completely “flawed design-build specification” was issued by CRA to which Delta/NWC appropriately objected but responded, in spite of the fact that the undersigned advised CRA of the inappropriateness of this documentation, used in the tender call in 1998.

This current XCG assessment has, in effect, asked for new proposals based on this flawed tender call and the ESR amendment very badly handled by CRA.

It is the opinion of the undersigned professional engineer that any shortcomings in XCG’s assessment are completely understandable as when the interview with NWC personnel took place, XCG possessed neither Delta/NWC’s original proposal nor CRA’s tender call for a design-build response.

The memo is designed to rectify a number but not all of these misunderstandings.

Respectfully,

NORTHERN WATERTEK CORPORATION

Jeffrey A. White, P. Eng.
President

c.c. Bruce Matthews, P. Eng., PEO

XCG Assessment of the NWC Proposal

It is respectfully requested that XCG correct and adjust the following information in the RVA Report on the Munster Wastewater Treatment Facility dated December 16, 2002. It is essential that the City of Ottawa also be informed of these adjustments.

1. Agricultural Land

Under no circumstances does the EVC* Snowfluent system proposed take ANY agricultural land out of production. In fact, the opposite is true. At Westport, the Snow Deposit Area of 11 hectares has never been used for crop production but had been used, according to the Mulville family (owners) for over 150 years as scrub brush and bush grazing land.

NWC was penalized for this assumption that NWC would take agricultural land out of production. In fact, the matrices should be adjusted to show that the opposite of this assessment is indeed fact. It must be therefore stated that existing agricultural land could continue to be used for that stated purpose as well as for NWC's technology.

2. Land Purchase

The requirement for extra land is completely in error. Total deposit area needed is 6 hectares plus any aesthetic buffer desired (to be negotiated).

NWC happens to know that adequate land, with adequate hydrogeological characteristics, with permeability of 10^{-5} to 10^{-6} cm/sec already exists – AND NO EXTRA land need be purchased.

The location of the system and the distribution towers is farther away from inhabited structures at Munster than at Westport by more than 3 times the distance, more than meeting ALL provincial requirements.

Noise and odour are not issues to be concerned with. Westport is proof of that during any season. Westport will confirm that (Scott Bryce at 613-273-2191).

3. Snow Deposit / Spray Irrigation Area

There appears to be a major misunderstanding here. These areas are one and the same. Snow melting is completed before the end of May (see Westport graphic data attached). At the last melt, the field is relatively dry due to the “shrinkage” of the snow coverage deposit at that time.

Processing generally continues to end of the first week in April with “empty lagoons” as a planned result, eliminating under ice odours et. al.

This will allow the lagoon to refill over a 60-day period of non-spraying, non-snowmaking, well into June when SPRAY of highly treated (tertiary, from intermittent filtration system) effluent begins ON THE SAME TERRAIN. Therefore, no additional spray equipment or land is needed.

Note ⁽¹⁾: At NWC’s expense, NWC will experiment and provide shorter towers, say 3 to 4 metres in height, during the summer months. The design allows for easy change out of nozzles and towers – spray nozzles during summer have a 20° departure angle over the 10° departure angle when making snow.

Note ⁽²⁾: NWC ran spraying tests at Westport 4 years ago to establish it as a contingency process for the Snowfluent. It went well with no detectable change to ground water chemistry. This was allowed by MOE under a temporary amendment of the C of A. A report is available.

4. Lagoon(s)

A decision must be made by the City. The existing lagoons can be retained for water fowl et. al. or they can be completely decommissioned and removed. We would be prepared to plant trees and rushes along the periphery of these decommissioned cells, if they wish to retain these non-required cells as a wildlife preserve.

NWC only requires a minimum of 60 days retention for both our contingent processes, which is 36,000 m³. NWC will renovate one of the larger cells up to 60,000 m³.

NWC requires to renovate only one existing cell, converting it into 2 (possibly) cells in series for solids treatment and odour control management.

NWC’s price includes these renovations, liner, etc.

As at Westport, there will be no odours, no NH₃-NH₄ build up, or H₂S. It is a matter of level and volume management of the lagoon(s) at particular times of the year.

5. Costs

The following is a revision of the misunderstandings of what was in the costs and what was not.

a) *Capital Costs*

This is a fixed price design-build proposal.

1. Contingencies are included in the price.
2. Lagoon liner and renovations are included.
3. Spray irrigation equipment is not required as NWC uses same towers et. al. as described above.
4. Snowfluent land discharge – not needed.
5. New spray irrigation land – not needed.

Note: NWC is very hard pressed as to how the City can add 5% administration costs to a design-build project. That is \$128,700 for what? This is excessive.

If this were a consultant-design-tendered-project, this 5% assessment could be justified. THIS IS NOT THE CASE.

We suggest 1% or \$25,740, or even 2%, for inspections, approvals and training – no more.

This puts our price at	\$2,574,000
Plus City costs at:	\$ 25,740
Total	\$2599,740
Say	\$2,600,000 plus applicable taxes

This is much less than \$3,733,000 in your assessment.

b) *Operating Costs*

NWC would be prepared to take the operating responsibility for this plant on a five year basis for \$100,000 per year, with a renewable option with inflationary adjustments annually. This includes the upgrade of the Munster Pumping Station and its operation to include it into our computerized operating system. This includes:

- labour
- energy
- testing – lab – MOE reports

- maintenance on a 20-year replacement basis
- Munster Pumping Station upgrade and operation
- snow removal – lawn maintenance as per Westport
- water

Normally NWC would do this for \$65,000 - \$75,000 per year but with recent hydro cost escalations and convulsions, this price would cover our costs accordingly in this period of chaos.

You can work the 20-year O&M present worth Table 4.4 Appendix C. This will reduce NWC's cost significantly, to below 4 MM\$.

The contingent permeability of “soils” between the site and the Jock may allow significant flow percentage – say 50% to 60% to access the Jock River of a very high quality of ground water.

Insufficient hydrogeological information exists at this time to accurately consider this. NWC would include in its price a further hydrogeological report to augment a C of A application.

Certainly some groundwater flow will reach the Jock River. How much remains to be determined.

NWC is currently working on an evaporation/evapotranspiration algorithm for system control for a major multinational client. This will be in full operation in July of this year.

NWC still has problems with the matrix process as being arbitrary and highly subjective, subject to manipulation of a subtle or otherwise nature.

Comparisons and ranking of different processes in categories beyond that required by regulating authorities appears to be somewhat facetious. NWC has a problem with this.

This matrix seems to protect the engineer more than the client.

This Munster project would represent a showpiece for NWC in our own municipality. It would demonstrate our latest designs and thinking, quite different from Westport. NWC has no intention of shortcutting the quality in any way. This is too important to NWC.

There is one thing in the RVA comments that bothers NWC. On page 27, they state, with respect to Westport, “While not an overwhelming industry application there have been significant...”

NWC wishes to point out that 7 NWC/Delta plants have been designed; 5 have been built and operated for several years, the oldest, Carrabassett Valley, to whom you spoke (9 years).

Two are currently being implemented and 2 additional are in proposal/contract/design stage. Three other plants in the USA are using the EVC*/Snowfluent technology, all with the same excellent results.

In spite of what has passed “under the bridge” on this project for Munster, NWC can, with assurance and clarity, confirm that, given the opportunity, NWC will do a first-class job for the City of Ottawa and the residents of Munster, as it did for Westport.

Sincerely,

NORTHERN WATERTEK CORPORATION

A handwritten signature in black ink that reads "Jeff White". The signature is written in a cursive style with a large, sweeping flourish at the end of the word "White".

Jeffrey A. White, P. Eng.
President

c.c. Bruce Matthews, P. Eng. PEO