



THE CITY OF WINNIPEG - VILLE DE WINNIPEG

WATER AND WASTE DEPARTMENT • SERVICE DES EAUX ET DES DÉCHETS
ENGINEERING DIVISION • DIVISION DE L'INGÉNIERIE

1500 PLESSIS ROAD
1500, CHEMIN PLESSIS
WINNIPEG, MANITOBA
R2C 5G6

FAX/TÉLÉC.: (204) 224-0033

July 17, 1998

Manitoba Environment
123 Main Street
Suite 160
Winnipeg, Manitoba
R3C 1A5



Attention: Mr. Larry Strachan, P.Eng. Director

Dear Sir:

**RE: CITY OF WINNIPEG SOUTH END WATER POLLUTION CONTROL CENTRE
EFFLUENT DISINFECTION FACILITY**
File Nos. RD 3-9(c), 020-17-06-04-00, 020-17-08-11-00

We are hereby requesting regulatory authority to proceed with construction and operation of an effluent disinfection facility for the South End Water Pollution Control Centre (SEWPCC). This facility will move towards ensuring that the City's pollution control centres will produce effluents consistent with the watershed classification for the Red and Assiniboine Rivers.

The SEWPCC is a modern state-of-the-art secondary treatment facility, owned and operated by the City of Winnipeg Water and Waste Department. Although two licences are in place, there currently is no licence governing liquid effluent emissions from the SEWPCC. Licence No. 1190 regulates air emissions from the facility and Stage 1 Licence No. 1363 was issued to permit expansion and alteration to the facility.

Upon proclamation of the Manitoba Environment Act in 1988, City of Winnipeg wastewater treatment facilities became subject to environmental licencing. A process for licencing was established, and pursuant to the act, an Environment Act Proposal was filed on March 2, 1990 for the SEWPCC. Final licencing was intended to proceed after the establishment of water quality objectives for the Red and Assiniboine rivers within and downstream of the City of Winnipeg.

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The Clean Environment Commission (CEC) released recommendations following the Red and Assiniboine public hearings in a document titled "Report on Public Hearings, Application of Water Quality Objectives for the Watershed Classification of the Red and Assiniboine Rivers and Tributaries within and downstream of the City of Winnipeg" dated June, 1992.

The CEC made two recommendations which impact the liquid effluent discharge from the SEWPCC to the Red River:

Recommendation 4 - protect for greenhouse irrigation
protect for field crop irrigation
protect for livestock watering

Recommendation 5 - protect for Primary Recreation

Protection of these uses for dry-weather flows are to be in accordance with the Manitoba Surface Water Quality Objectives (MSWQO). These recommendations were accepted by the Minister of Environment in November 1993, creating an obligation on the City for effluent disinfection of all three sewage treatment facilities.

The proposed SEWPCC facility will disinfect secondary process effluent during dry weather conditions using ultraviolet light. The facility will be located on the west side of the existing structure. Flows up to the maximum dry weather flow rate will be diverted from the outfall conduit to the facility. Disinfected effluent will then be returned to the original conduit for discharge to the Red River.

The facility will include two flow channels, each equipped with medium pressure ultraviolet light disinfection equipment. The Trojan UV System 4000 has been specified as the "standard of acceptance", but the tendering process will allow manufacturers of equipment deemed to be equal to compete for the supply.

The disinfection process will be enclosed by a superstructure consistent with standards used in the existing facility. The process will be automated, with control and alarming tied into the existing computer control system. A summary of the functional design report prepared by the project consultants is attached for further information.

We propose the regulatory requirements for the facility be based on the following:

- 1) Fecal coliform as the indicator organism for the purpose of determining compliance.
- 2) Disinfection of dry weather flow, defined as the period of time the raw sewage pumping rate is less than or equal to 100 ML/d.
- 3) Disinfection season from May 1 to September 30.
- 4) Disinfection exempted for geodetic river levels exceeding 229.0 metres at the point of discharge.

- 5) An end-of-pipe disinfection limit of 1,000 fecal coliform per 100 ml on a monthly geometric mean basis.
- 6) Compliance monitoring for monthly limits based on geometric means of a minimum of 3 samples per week, collected during dry weather flows.

The foregoing proposed licencing parameters differ from previous discussions between Manitoba Environment and the Water and Waste Department in two main areas, the river level at which a disinfection exemption will occur and the end-of-pipe disinfection limit.

A detailed review of the facility hydraulics has indicated that precautionary measures would have to be initiated at river elevation 229.0 to protect against wide spread basement flooding. In our previous discussions we indicated this level would be 230.0. A letter dated June 25, 1998 from the project consultants is attached further explaining this change.

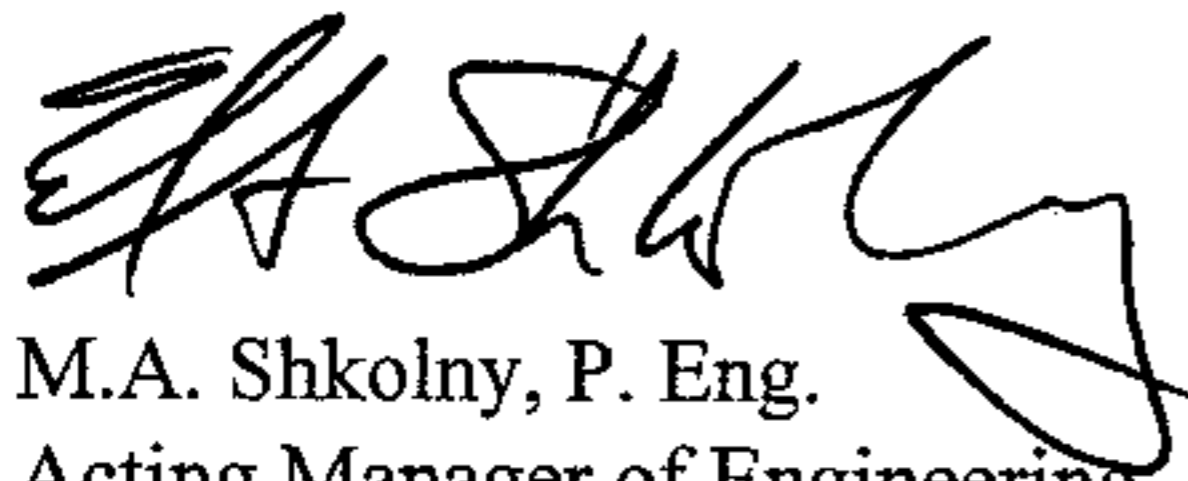
An end-of-pipe discharge fecal coliform limit of 1,000 per 100 ml is proposed. Although the facility being designed is capable of meeting a weekly (three sample) geometric mean of 400 fecal coliform and a monthly (three samples per week) geometric mean of 200 fecal coliform, we do not believe there to be a material benefit for the more stringent limits.

Therefore, we are hereby requesting approval to proceed with the SEWPCC effluent disinfection project as a minor alteration in accordance with the parameters listed as items 1 to 6 above, pursuant to Environment Act Clause 14(2). We understand that approval of the project as a Notice of Alteration is not subject to a fee and can be approved within a short time frame.

Our intended schedule is to advertise the tender on July 27, and award a construction contract in mid September. On this basis, it is anticipated the facility will be constructed by June 1999, with commissioning and start-up occurring thereafter.

We look forward to your response.

Yours truly,



M.A. Shkolny, P. Eng.
Acting Manager of Engineering
Water and Waste Department

/EJS

Attachment

c: E.J. Sharp, P.Eng.
P.E.A. Lagasse, P. Eng.

August 4, 1998
File No: 1069.00

Mr. M.A. Shkolny, P. Eng.
Acting Manager of Engineering
Water and Wastewater Department
Engineering Division
1500 Plessis Road
Winnipeg MB R2C 5G6

Dear Mr. Shkolny:

**Re: City of Winnipeg South End Water Pollution Control Centre –
Effluent Disinfection Facility**

I am responding to your letter of July 17, 1998, which is accepted as a Notice of Alteration pursuant to Section 14 of The Environment Act, for the construction and operation of the Ultra Violet Light Disinfection Facility for the South End Water Pollution Control Centre (SEWPCC).

As the potential environmental effects resulting from the alteration are insignificant, approval is hereby given to implement the alteration subject to the following limits, terms and conditions:

1. Fecal Coliform shall be used as the regulatory indicator organism for the purpose of determining compliance.
2. Dry weather flow shall be defined as the period of time the raw sewage pumping rate is less than or equal to 100ML/d.
3. All wastewater flow of 100 ML/d received at the SEWPCC, shall be disinfected. Where dry weather flows exceed 100 ML/d during the period May 1 to September 30 of the same year, the City shall be required to inform the Director, Environmental Approvals, by facsimile, of the excess flow within 24 hours of its occurrence.
4. The disinfection season shall be defined as the period between May 1 to September 30 of the same year.
5. Disinfection shall not be required when river levels exceed a geodetic elevation of 229.0 metres at the point of discharge.

6. The City shall be required to inform the Director, Environmental Approvals of any river levels in excess of the geodetic elevation of 229.0 metres within 24 hours of their occurrence, and provide the Director, Environmental Approvals with a sewage treatment and contingency plan during this period.
7. An end-of-pipe discharge fecal coliform limit of 200 fecal coliform per 100 millilitres of sewage effluent shall be required during dry weather flow conditions.
8. Compliance with the fecal coliform limit shall be determined by the monthly geometric mean of a minimum of 3 consecutive ~~24-hour flow proportional~~ composite samples collected per week during dry weather flows.

We look forward to working with you in the implementation of disinfection at the SEWPCC.

Yours truly,

Original Signed by

Larry Strachan, P. Eng.
Director
Environmental Approvals

c. D. Ediger
bc. D. Williamson

CC/bls