



Manitoba Environment and Climate
Environmental Stewardship Division
Environmental Approvals Branch
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May 19, 2023
Client File No.: 1069.10
File No.: S-926, EMS
020-17-08-11-00
020-17-08-11-0N

Attention: Agnes Wittmann, Director

**RE: NOTICE OF ALTERATION – CITY OF WINNIPEG SOUTH END SEWAGE TREATMENT PLANT (SEWPCC)
ENVIRONMENT ACT LICENCE NO. 2716 RR**

The City is meeting nutrient licence limits for total phosphorous and total nitrogen for normal flow conditions (94% of an average year), providing a benefit to the health of the rivers and lakes since mid-July, 2022.

On February 25, 2022, the City of Winnipeg (City) submitted a Notice of Alteration (NOA) for Environment Act Licence No. 2716 RR for the South End Sewage Treatment Plant (SEWPCC). The NOA requested a six-month extension to July 31, 2023 to meet full licence compliance using biological nutrient removal.

Manitoba Environment and Climate (E&C) denied the NOA on April 14, 2022, but accepted the submission as a compliance plan.

On May 19, 2023, a virtual meeting was held between E&C and the City to discuss the status of construction and commissioning at SEWPCC. The City advised E&C that, while they are meeting nutrient limits for normal flow conditions, two critical milestones defined in the compliance plan would not be met by the specified date.

Licence Compliance with Nutrient Limits for Normal Flow Conditions

The City and project team have made significant progress on the SEWPCC Upgrade project. Most notably:

- commissioning of the biological nutrient removal (BNR) area resulting in nitrogen levels below 15 mg/L
- use of ferric chloride for phosphorous removal resulting in phosphorous levels below 1 mg/L
- successful completion of critical winter work to upgrade the raw sewage pump and UV bypass to increase overall plant capacity from 360 MLD to 420 MLD and UV treatment from 100 MLD to 225 MLD

Licence Compliance with Nutrient Limits for All Flow Conditions

Work Outstanding: Commissioning of the High Rate Clarification (HRC) System

The first outstanding item required to bring SEWPCC to full compliance is commissioning of the High Rate Clarification (HRC) system.

The new BNR system provides full nutrient removal for flows up to 150 MLD; this captures daily maximum flows to the plant an average of 342 days each year. The HRC system, which will only be used for higher wet weather flows from spring through fall, provides primary treatment, chemical phosphorus reduction and disinfection for an additional 270 MLD.

Status of the HRC commissioning:

- Installation of the two HRCs is complete
- Commissioning of the HRCs is expected to start the beginning of June 2023. This work will take four to seven months, with completion between end of September and end of December 2023
- The City is working with the Contractor and Consultant to find efficiencies to meet the earlier schedule

Licence Compliance with Full Biological Nutrient Removal

Work Outstanding: Commissioning of the Fermenters, Thickeners & Biofilters

The second outstanding item to meet full compliance is conversion of the High Purity Oxygen (HPO) tanks to fermenters, thickeners and biofilters. The fermenters are required for biological phosphorous removal.

Status of fermenter, thickeners and biofilters commissioning:

- This work began in September 2022 with cleaning and hydro demolition of concrete in the existing HPO tanks
- Installation of the drum thickeners has commenced and is expected to be complete summer 2023
- Installation of the foul air piping and associated equipment is approximately 80% complete
- Fermenter and biofilter tanks have been installed and concrete repairs are currently underway. Construction is expected to be complete in September 2023
- Commissioning of the fermenters, thickeners and biofilters will take approximately four months and will begin following HRC commissioning

Request for Revised Compliance Plan Schedule

The City is requesting a revision to the April 14, 2022 compliance plan for (i) nutrient limits for all flow conditions, and (ii) full biological phosphorous removal, as described in Table 1. We acknowledge that SEWPCC remains out of compliance for high flow conditions and biological phosphorous removal. The project team has been working hard to meet full compliance and will continue to make every effort to bring the upgrades to completion as early as possible.

Table 1: Revised Compliance Schedule to meet all Licence Conditions

Licence Condition	Previous Planned Completion Date	Proposed Revised Completion Date*
Start Demonstration Testing and Seeding of BNR Process	June 6, 2022	(Completed May 30, 2022)
Compliance with licence limit for Phosphorous and Nitrogen for Normal Flows	August 29, 2022	(Completed July 27, 2022)
Compliance with Nutrient Limits for all Flows	September 30, 2022	September – December 2023
Licence Compliance with full Biological Nutrient Removal	July 31, 2023	December 2023 – April 2024

* The City and Contractor are working collaboratively to meet the earlier dates

The HRC and fermenters are complex systems. Efficiency of the commissioning process could be impacted based on the quality of installations and the control systems. The City and Contractor are working collaboratively on a quality management plan to mitigate issues based on lessons learned from previous commissioning tasks on this project.

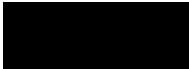
With the revised schedule, full compliance with all licence conditions should be achieved between December 2023 and April 2024. The City and Contractor are seeking every opportunity to optimize work flow to achieve compliance by December 31, 2023.

Although this has been a challenging project that has experienced delays, the current upgrades provide significant benefit to the environment by meeting total phosphorous and total nitrogen nutrient limits for flows up to 150 MLD, providing full treatment 94% of the time on an average year.

The City will continue to provide updates on the progress and schedule of critical milestones as part of the regular SEWPCC Biological Nutrient Removal and Upgrade progress reports.

Should you wish to review this information in more detail, we would be pleased to meet with your team. If you have any questions about this letter, please contact me at 204-986-5210 or by email at cwiebe@winnipeg.ca.

Sincerely,



Cynthia Wiebe, P. Eng., CAMP
Manager of Engineering Services

CW/jkm

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