Water and Waste
Eaux et déchets

Environment and Climate Change
Environmental Stewardship Division
Environmental Approvals Branch
Box 36, 14 Fultz Blvd
Winnipeg, MB R3Y 0L6

April 30, 2024
Client File No.: 1069.10
Our File No.: S-926, EMS
020-17-08-11-00
020-17-08-11-0N

Attention: Agnes Wittmann, Director

RE: QUARTERLY PROGRESS REPORT FOR SEWPCC BIOLOGICAL NUTRIENT REMOVAL AND UPGRADE PROJECT: JANUARY 1 – MARCH 31, 2024

This report summarizes progress on the South End Sewage Treatment Plant (SEWPCC) upgrades, operating under Environmental Act Licence No. 2716 RR, from January 1 to March 31, 2024.

Area G: Grit and Screening Building

All new and upgraded equipment is currently in service and operational; the system is performing as designed. Area was handed over to the City of Winnipeg (City) January 15, 2024.

Area K: High Rate Clarification (HRC) System

The HRC system vendor was onsite in late February to conduct functional performance testing on the installed equipment. The intent of this visit was to evaluate the system's performance and provide recommendations to increase effluent quality. Issues with sand loss and chemical usage were discovered. Another vendor site visit to take place in April 2024 to address these issues.

Area C: Chemical/Electrical Building

Area has been handed over to the City. Chemical skid testing to be completed in conjunction with the commissioning of the fermenters. Final testing of the electrical portion of the building will be completed once the entire plant load is connected to the system (Q3 2024).

Area R: Biological Nutrient Removal (BNR)

Area has been handed over to the City.

Area U: UV Upgrades

The Contractor continues to work on the control system automation. Final demonstration testing of the system is anticipated to be completed Q2 2024. The UV upgrade has been operational since May 2023; the treatment capacity of the plant increased from 110 MLD to 225 MLD. The UV Weir Gate was isolated from the plant effluent in February 2024 to repair a leak. The repair was completed in March 2024 and the UV treatment is now meeting E. coli license compliance.

Areas D: HPO Tank Conversion to Fermenters

Concrete refurbishment and application of chemical resistant coating (CRC) is complete. The CRC delamination areas have all been identified and repairs are anticipated to be complete early Q2 2024. Electrical and mechanical process equipment installations were completed. Commissioning of the process is expected in Q2 2024.

Areas T: Biofilter Odour Control

Installation of Biofilter media started but was paused due to the discovery of CRC delamination. Media installation will resume in Q2 2024. Civil, electrical, and mechanical installation is ongoing. Commissioning is anticipated in Q2 2024.

Key Project Risks

Risk (ongoing): Failure of the Contractor to meet critical path items.
Mitigation: The Project Team continues to work with and provide additional oversite to the Contractor in order to achieve key critical path items. This has resulted in increased level of outputs by the Contractor.

Risk (ongoing): Final installation fails to meet specified quality requirements.
Mitigation: Final Project Team continues to work with the Contractor on effective quality management systems in order to complete the final works within specifications.
Risk: Delamination in certain areas of the fermenters and odour control tanks has been observed.
Mitigation: Repairs are almost complete and will be inspected after the successful completion of integrated wet testing.

Performance Updates

The Total Phosphorus (TP) limit of 1.0 mg/L and Total Nitrogen (TN) limit of 15 mg/L in the final effluent are being met under normal flow conditions.

With the SEWPCC plant converted to a BNR system, it allowed for the introduction of ferric chloride for chemical trimming of all primary effluent. This, along with the increased biological growth in the BNR tanks, has allowed the City to achieve final effluent concentrations below 1 mg/L TP and 15 mg/L TN under normal flow conditions. Laboratory results can be found on the City's website at winnipeg.ca/wwcompliance.

Note that there were abnormal flow conditions this quarter that resulted in the exceedance of TP and TN. The TP thirty-day rolling average exceeded the licence limit on 27 days in February and March due to a process upset caused by a reduction of incoming raw sewage, as a result of the sewage spill near the Fort Garry Bridge. The TN thirty-day rolling average exceeded the licence limit on 32 days in February and March due to an unexpected, prolonged increase of incoming TN concentration from the collection system and a seasonal shift in influent characteristics.

The City continues to utilize the measures within the contract to move the contractor toward project completion in order to meet the licence requirements.

Should you have any questions on the SEWPCC Biological Nutrient Removal and Upgrade Project, please contact Linda McCusker at 204-330-1459 or by email at lmccusker@winnipeg.ca.

Sincerely,

[redacted]
Bronwyn Jones, P. Eng.
Acting Manager of Engineering Services

ATTACHMENT: **Table 1**

JDF/dr

c: Y. Hawryliuk, MSc, Environment and Climate (email)
S. Burland Ross, M. Eng., P.Eng., Environment and Climate (email)
N. Suresh, P. Eng., Environment and Climate (email)
T. W. Shanks, M. Eng., P. Eng., Water and Waste Department (email)
C. Carroll, P. Eng., Water and Waste Department (email)
L. McCusker, P. Eng., Water and Waste Department (email)
J. Flynn, P. Eng., Water and Waste Department (email)

Table 1: SEWPCC Contract 4 Schedule Milestone Dates

Area	Contract Dates	% Complete			Expected Completion	Work Remaining
		Jan	Feb	Mar		
Area S: Secondary Clarifiers 1 & 2	March 20, 2019				Complete	
Area S: Secondary Clarifiers 4 & 5 Demonstration Test	July 30, 2019				Complete	
Area G: Grit and Screening Building Demonstration Test	August 18, 2019	100%			Complete	
Area G: Raw Sewage Pump #2, Demonstration Test	March 20, 2021				Complete	
Area K: High Rate Clarification System, Demonstration Test	April 6, 2020	99%	99%	99%	Q2 2024	System optimization and final documentation
Area C: Chemical/Electrical Building Testing	April 6, 2020				Complete	
Area R: BNR Demonstration Test	August 10, 2020				Complete	
Area U: UV Disinfection	N/A*	95%	96%	97%	Q2 2024	Final Demonstration Test
Area D & T: HPO Tank conversion to Fermenters and Biofilter	July 18, 2021	86%	87%	88%	Q2 2024	Construction works and commissioning, including CRC delamination repairs.
Substantial Performance	August 29, 2021	91%	91%	92%	Q3 2024	

*No critical milestone date defined in contract.