



Environment and Climate Change
Environmental Stewardship Division
Environmental Approvals Branch
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July 29, 2024
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Our File No.: S-926, EMS
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Attention: Agnes Wittmann, Director

**RE: QUARTERLY PROGRESS REPORT FOR SEWPCC BIOLOGICAL NUTRIENT REMOVAL
AND UPGRADE PROJECT: APRIL 1 – JUNE 30, 2024**

This report summarizes progress on the South End Sewage Treatment Plant (SEWPCC) upgrades, operating under Environmental Act Licence No. 2716 RR, from April 1 to June 30, 2024.

Area K: High Rate Clarification (HRC) System

The HRC system vendor returned to site in late April to conduct functional performance testing on the installed equipment. Although effluent quality targets are being met, performance guarantees with respect to chemical use and sand loss are not being achieved. Efforts are ongoing to resolve this issue. Area handover is expected in Q3 2024.

Area U: UV Upgrades

Upgrades to the control system are complete and demonstration testing was completed in Q2 2024. Area handover is anticipated in Q3 2024.

Areas D: HPO Tank Conversion to Fermenters

The installed Waste Activated Sludge (WAS) Rotary Drum Thickeners (RDT) were found to have less capacity than specified. They can treat the full plant load but they do not have any redundancy. The vendor of the WAS RDT is supplying replacement RDTs that will be installed at a later date. In the meantime, to allow for full plant commissioning, a bypass assembly is being constructed which will allow one of three Fermented Sludge RDTs to be utilized in a standby capacity. Commissioning is anticipated to be completed by Q3 2024.

Areas T: Biofilter Odour Control

Media installation was completed in June 2024. Civil, electrical, and mechanical installation are ongoing. Start up of the Biofilters by the third-party vendor was completed in Q2 2024. Demonstration testing of the biofilters will continue in Q3 2024 with introduction of sludge into the fermenters.

Please note the Substantial Performance date has shifted from Q3 2024 to Q4 2024 due to delamination and WAS RDT issues. Table 1 has been updated to reflect the shift in schedule.

Key Project Risks

Risk (ongoing): Failure of the Contractor to meet critical path items.

Mitigation: The Project Team is working with and providing additional oversight to the Contractor in order to achieve key critical path items. This has resulted in increased productivity by the Contractor.

Risk (ongoing): Final installation fails to meet specified quality requirements.

Mitigation: The Project Team is working with the Contractor on effective quality management systems in order to complete the final works within specifications.

Risk (ongoing): WAS RDTs have less capacity than specified.

Mitigation: Full plant commissioning will be performed with the current undersized WAS RDTs and a bypass assembly will be constructed which will allow one of three Fermented Sludge RDTs to be used in case of equipment failure.

Risk (new): Issues were identified with the bases of two of the BNR Mixers. There is a risk of the same issue occurring in the other mixers. If repairs are required, fixing the mixers may entail taking a BNR train out of service for an extended period. Increased flow or nitrogen loading during the shut down could present a risk of exceeding nitrogen licence limits.

Mitigation: A shut down has been scheduled to occur in July 2024 during which the mixers will be removed and cleaned. During this time, the issue will also be investigated and a plan for repair will be developed.

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. During this reporting period, there were no TN or TP exceedances of the license. There was one TSS licence exceedance on April 17th, 2024 of 34 mg/L, due to high influent flows.

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 Cynthia Wiebe at 204-986-5210 or by email at cwiebe@winnipeg.ca.

Sincerely,



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

ATTACHMENT: Table 1

RD/dr

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Table 1: SEWPCC Contract 4 Schedule Milestone Dates

Area	Contract Dates	% Complete			Expected Completion	Work Remaining
		Apr	May	Jun		
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				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 Q3 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*	98%	98%	99%	Q2 2024	Final Demonstration Test
Area D & T: HPO Tank conversion to Fermenters and Biofilter	July 18, 2021	90%	91%	92%	Q2 2024 Q3 2024	Construction works and commissioning
Substantial Performance	August 29, 2021	93%	94%	94%	Q3 2024 Q4 2024	Has shifted due to delamination and WAS RDT issues

*No critical milestone date defined in contract.