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Environment, Climate and Parks
Environmental Stewardship Division
Environmental Compliance and Enforcement
1007 Century Street
Winnipeg MB R3H 0W4

Attention: Laura Pyles, A/Director

**E: SEWPCC BIOLOGICAL NUTRIENT REMOVAL AND UPGRADE PROJECT – 2 21
QUARTER 4 SUMMARY REPORT – OCTOBER 1 TO DECEMBER 31, 2021**

The City of Winnipeg is submitting the Quarter 4 Summary Report for the South End Water Pollution Control Centre (SEWPCC) Biological Nutrient Removal and Upgrade Project operating under Environmental Act License No. 2716RR as required by Manitoba Conservation and Climate Notice of Alteration dated December 22, 2021. This report summarizes the work tasks required to complete the SEWPCC Upgrades required to meet the Environmental Act Licence requirements for the period of October 1 to December 31, 2021.

The following summarizes the works conducted on key areas of the upgrade project.

a) a list of tasks and proposed completion dates such that the construction and commissioning of the upgraded wastewater treatment plant shall be completed as soon as possible and in order to meet the effluent limits as specified in Clause 28 of the License.

Secondary Clarifiers 1 & 2

Refurbishment of the secondary clarifiers (SC) 1 & 2 commenced September 20th following the stable operation of SC 4 & 5. Work involves the concrete refurbishment, installation of new weir baffles, electrical controls, mechanical skimmer and walkway. Work expected to be completed and full handover by May 2022.

Grit and Screening Building (Area G) Demonstration Testing

The work in Area G remains at 95% complete for this period. Contractor focus has been on Area S and R through this period. Continued deficiency items and commissioning delays have continued to push the area handover. The expected handover has been revised to the end of Q1 2022.

Secondary Clarifiers 4 & 5 Demonstration testing

Demonstration testing and stable operation of SC 4 and 5 was achieved during this period. SC 4 and 5 are operating as designed without issue. Handover of SC 4 & 5 was to be completed by end of Q3; however, continued delays by the contractor in completing documentation and contract deliverables has extended the handover to the end of Q1 2022.

High Rate Clarification system, Demonstration Test

The high rate clarifiers testing and commissioning has been delayed during this period to allow the contractor to focus on Area S and R. Demonstration testing and handover is expected by Q3 2022 following the spring high flow levels. This has been revised from Q2 2022 as previously reported. Work remains at 90% complete.

Chemical Building Testing

On going testing and deficiency clean up of alarms, set points and equipment communication occurred during this period. Work is estimated at 97% complete with operational handover revised to the end of Q1 2022.

Biological Nutrient Removal, Demonstration Test using chemical addition for phosphorus removal (Licence Conditions)

Testing and deficiency remediation continued through this period. At the end of Q4 2021, the contractor completed pre-demonstration testing and had approximately 65% of the media loaded into the BNR tanks to complete quality checks on instrumentation and equipment. Prior to the holiday shutdown, the system was ready to start seeding of sludge and demonstration testing as planned for January 10, 2022. On December 25, 2021 a power interruption resulted in a backflow of media out of the BNR system. The seeding has been delayed until the root cause is determined and mitigative measures can be implemented. The works are approximately 95% complete.

Raw Sewage Pump #2, Demonstration Test

The raw sewage pump #2 was to be installed and tested during the low flow period of 2021/2022. However, as a result of the continued delays of the commissioning of the BNR system the Contractor missed the low flow period for the pump changes. As a result, it is revised to Q1 2023. Work completed remains at 10%.

HPO Tanks conversion to Fermenters and Biofilter, Demonstration Test

Work on the HPO Tank conversion to fermenters will occur once seeding of the BNR is completed and stable. No work has started on this area. Revised completion date is Q1 2023.

Substantial Performance

Currently substantial completion has been revised to Q3 2023.

b) Measures the City will take such that the requirements to meet the total phosphorus limit of 1.0 mg/L in effluent can be met as soon as possible without any further delay.

At this point in the construction process there is no effective temporary phosphorus removal system that can be added. Once the BNR demonstration testing is occurring, chemical trimming through the use of Ferric Chloride will be implemented to control phosphorus before the fermenters are commissioned and operating in full biological state.

Status of the trimming process will be updated on future reports and once a detailed schedule of events can be provided. Estimated date for stable operation of BNR will be dependent on corrective and mitigative measures required to prevent future media movement out of the BNR.

Table 1. SEWPCC Contract 4 Tasks and Schedule Milestone Dates:

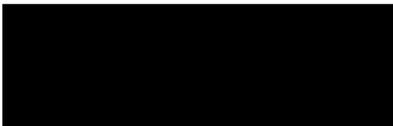
Area	Contractual Dates	% Complete Previous Reported ⁽¹⁾	% Complete Current	Expected Completion	Work Remaining
Secondary Clarifiers 1 & 2	March 20, 2019	5	20	Q4 2021 Revised Q1 2022	SC 1&2 work to be completed in low flow duration approximately 6 months.
Grit and Screening Building (Area G) Demonstration Testing	August 18, 2019	95	95	Q1 2022	Continued deficiency cleanup with respect to automation and controls
Secondary Clarifiers 4 & 5 Demonstration testing	July 30, 2019	98	99	Q2 2021 Revised Q1 2022	Handover pending document close out.
High Rate Clarification system, Demonstration Test	April 6, 2020	90	90	Q4 2021 Revised Q3 2022	Commissioning requires spring flow conditions.
Chemical Building Testing	April 6, 2020	97	98	Q2, 2021 Revised Q1 2022	Automation deficiencies, demonstration testing and commissioning to occur with BNR
Biological Nutrient Removal, Demonstration Test using chemical addition for phosphorus removal (Licence Conditions)	August 10, 2020	95	95	Q4 2021 Revised Q1 2022	Commissioning and Deficiencies – QA/QC checks in prep for start of seeding.
Raw Sewage Pump #2, Demonstration Test	March 20, 2021	10	10	Q1 2022 Revised Q1 2023	Work not started. Contractor has missed the low flow period.
HPO Tanks conversion to Fermenters and Biofilter, Demonstration Test with biological nutrient removal system	July 18, 2021	0	0	Q3 2022 Revised Q1 2023	Work to start once BNR complete.

Substantial Performance	August 29, 2021	68	70	Q3 2022 Revised Q3 2023	
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Note:

(1) % Complete compared to previous quarterly reporting.

Should you have any questions on the SEWPCC Biological Nutrient Removal and Upgrade Project, please contact me at 204-471-1765 or by email at cjavra@winnipeg.ca.



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Attachment

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