press release

Trevose, Pennsylvania, June 29, 2021

SUEZ'S ZEELUNG TECHNOLOGY SELECTED TO DEMONSTRATE LOW ENERGY, SMALL FOOTPRINT TREATMENT ENHANCEMENT IN TORONTO

SUEZ's ZeeLung* technology has been selected to help restore wastewater treatment capacity and achieve a high level of nitrification at the City of Toronto's North Toronto Treatment Plant (NTTP). ZeeLung Membrane Aerated Biofilm Reactor (MABR) system was selected to demonstrate its potential to enhance treatment in a compact footprint while also reducing energy consumption.

The North Toronto Plant has produced a high-quality effluent for the better part of a century. However, like many plants in Canada, it is now required to achieve a higher level of treatment than it was originally designed for. The plant must achieve a high level of nitrification to produce a non-acutely toxic effluent and would require upgrades to operate again at its original design capacity of 45.5MLD.

The City realized that the upgrade project was an opportunity to evaluate innovative technologies for reduced energy consumption and intensified treatment at Toronto's smallest plant where the inlet flow rate can be controlled. If the evaluation goes well, the MABR technology will enable the City to meet its treatment goals in a compact footprint, and obtain valuable input for consideration in future capital upgrades at the City's larger wastewater treatment facilities.

Consulting engineer (CIMA+) for the City conducted a preliminary design and economic evaluation that showed an MABR upgrade would save 60% on capital cost and 55% on lifecycle cost compared to a conventional activated sludge upgrade.

To evaluate in real-world conditions, the City of Toronto is upgrading the aeration tanks at the North Toronto Treatment Plant and installing ZeeLung MABR in two of the tanks. Performance testing will be carried out and the MABR technology will be assessed compared to the same-sized conventional activated sludge system being operated in the remaining tanks.

"We are confident in the ZeeLung technology for treatment intensification with lower energy consumption than conventional activated sludge," said Kevin Cassidy, executive vice president engineered systems for SUEZ – Water Technologies & Solutions. "Because of its ability to maximize treatment capacity in existing tank volumes, the MABR system is an ideal choice for retrofits of this type to help more mature plants serve growing populations."

In conventional wastewater treatment, 60% of the energy used is consumed by blowers tasked with distributing oxygen necessary for biological processes and nutrient removal. With ZeeLung technology, oxygen is delivered without bubbles through molecular diffusion, which reduces the energy required for oxygen transfer by a multiple of four. Wastewater treatment plants significantly reduce their energy footprint while also increasing capacity and improving treatment quality.

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The project is being delivered and constructed by Bennett Mechanical Installations and will be their second MABR system installation with SUEZ in Ontario. Based on the upgrades required at the facility it is expected to commission in 2023.

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