

## EMMA LAKE LAGOON UPGRADES

### Client

District of Lakeland 521

### Project Value

\$3,500,000 Total

### Project Details

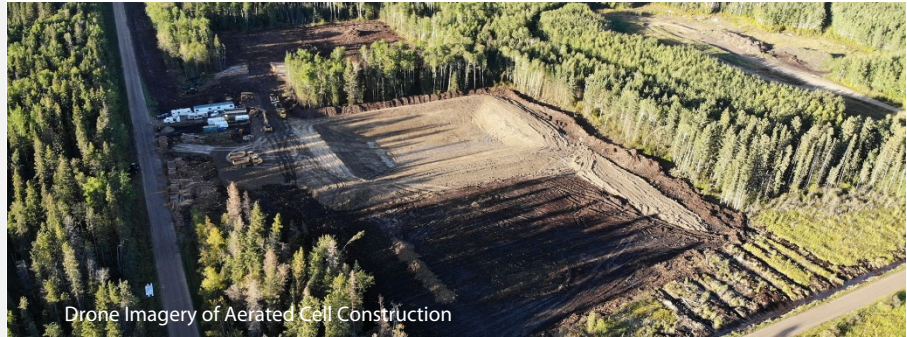
- Retrofit and optimization of existing lagoon
- Two new aerated primary treatment cells
- New aeration building
- Automated access and security system and
- 60kw solar power system

### Services

- Preliminary Design
- Detailed design
- Economic and Solar Power Analysis
- Land Acquisition Support
- Tendering
- Resident Engineering
- Contract Admin

### Date Completed

Ongoing - 2020



The Emma Lake Lagoon serves a large full time and with immense seasonal population fluctuations within the R.M., the Village of Christopher Lake, several developments in the District, and six campgrounds. Contributing flow is exclusively by truck haul. Due to continued growth in the District, a new upgraded facility was required, to meet federal Wastewater Systems Effluent Regulations requirements, as well as increase the treatment capacity of the facility.

Detailed design included two new deep aerated partial mix cells to provide primary treatment and reduce footprint size in a constrained and environmentally sensitive area. Design includes repurposing the existing primary cell for storage cell and an office/aeration pumphouse housing two 60 hp blowers utilizing a Nexom Optaer system. Due to the high volume of sewage hauling, a de-sludging program will be completed in early 2021 in the existing truck dump area and following system commissioning.

The project also includes a 60 kW solar panel array, that will provide the base load electrical power required by the aeration system. The Solar array was optimized based on the location of exposure and uses bi-direction panels to capture direct and reflected photovoltaic energy during winter months. Truck unloading times, control and tracking will also be improved with four concrete dumping pads and a new automated site access system using proximity sensors on septic trucks open access gates into the dumping area. Security and closed-circuit camera systems are included with the automation design. Design was initiated including initial land acquisition discussions with the Ministry of Environment in October 2019. Project tendering in August 2020. Construction was started in September and is nearing substantial completion as of the time of this proposal with commissioning in early spring 2020/2021.

