

WHITECAP PTIC INFRASTRUCTURE PROGRAM

Client

Whitecap Dakota First Nation

Project Value

\$13,500,000 Total
\$3,700,000 Lagoon

Project Details

- New Primary Cell Addition
- New Storage Cell
- Transfer piping
- Retrofit and replacement of existing aeration system
- New Aeration Building

Services

- Preliminary design
- Detailed design
- Conceptual Layout
- Tendering
- Resident Engineering
- Contract Admin
- Commissioning
- Post Completion Services

Date Completed

2018



BCL completed preliminary and detailed design of a new primary cell and storage expansion with aeration to meet the treatment requirements of the existing population and future commercial and industrial expansion. BCL worked with the First Nation to attain funding through the New Building Canada Fund, including grant application and business case development. The project utilized the adjacent wetlands as a discharge and mixing point, to meet WSER guidelines. The project included a new 1.72 ha aerated detention cell, 19,040 m³ aerated storage cell, synthetic lagoon liner, blower building construction and modification and construction of new transfer piping between cells.

BCL worked in concert with Nexom to upgrade the existing aeration system to maximize treatment in the existing cells and to minimize the footprint for the proposed expansion. Located within the flood plain of the South Saskatchewan River, the lagoon location is constrained by existing surrounding development and a lack of suitable land for construction. Detailed design required engineering of the lagoon floor to include synthetic geotextile installation and imported granular fill to provide a stable subgrade to support heavy civil equipment and allow construction to occur.

The system utilizes a Nexom Optaer system to provide aeration to the lagoon and reduce odour generation and has received positive feedback from nearby residents. The system is designed to operate as a continuous discharge facility with capacity to support existing the community and future commercial development including the new Dakota Dunes Hotel and Spa.

