

Xylem assists William Head Treatment Plant setup temporary aeration system

with the help of submersible Jet Aerator and Flygt pumps

To control and manage the growing inflow, William Head Treatment Plant, located southwest of Victoria, BC, decided to increase their capacity and extend their facility. This project consisted of construction and related work.

Project

The project was awarded to Rocky Point Metalcraft Ltd, located in Victoria, BC and the expansion of the facility required shutting down the existing aeration system. Kamal Singh, (AScT.), Dewatering Specialist at Xylem had already been working on this project with WorleyParsons, an engineering, procurement and construction management service company.

The consulting engineers advised that the size of the temporary lagoon is approximately 470 cubic meters and has a depth of 8 - 10 feet. The temporary lagoon is lined with a thick liner to prevent any spills. The consulting engineer wanted to operate the aerator for 16 hours a day and the remaining time it would let the pond settle and decant.

The current MLSS was 1000 mg/l and they wanted a standard oxygen transfer rate of 83 kg oxygen/day. They also wanted a small transfer pump to move sewage and some related piping. Over the discussion, it was also mentioned that they have existing 208 volts / 3 phase power supply available on site.

“Once installed, the Jet Aerator and pumps operated flawlessly and at finest levels as forecasted”

Solution

Mr. Singh proposed to use a submersible jet aerator (JA117) combined with a Flygt 3153 / 20 HP submersible motor and a medium head impeller. The Jet Aerator delivered 10 kg O₂ / hr which according to WorleyParsons was optimum. The Jet Aerator was 600 volts / 3 phase. To use on-site power, a 208 volts / 3 phase to 600 volts / 3 phase 25 KVA step up transformer was used.



The temporary lagoon where the Flygt Jet Aerator, the N 3153 submersible pump and the flotation module were installed.

END USER:	William Head Treatment Plant, BC.
CLIENT:	Rocky Point Metalcraft Ltd.
ORDER DATE:	September 2009.
COMPLETION:	January 2010.
XYLEM'S ROLE:	Provided Flygt rental equipment.
PRODUCTS:	Jet Aerator JA117, Flygt N 3153 & 3127, 6" gate valve, PFM flotation module.

The Jet Aerator was mounted on a concrete base to give it a stable foundation. A rubber pad was added at the bottom of the concrete base so that the Jet Aerator foundation would not rip the liner with its starting torque.

To transfer 4000 cubic meter per day, Mr. Singh proposed a Flygt 3127 / 10 HP / 208 volts / 3 phase pump on a flotation module. The flotation module is used so that the pump does not pick up sediments from the bottom of the lagoon. Also, a combination valve (vacuum breaker & air release) and a 6" gate valve was proposed to manage the flow and run the pump at its best efficiency point. The system was recommended and rapidly accepted by both the contractor Rocky Point and the WorleyParsons consulting engineers. Xylem mechanics began putting together the Jet Aerator, stainless steel piping, pumps, flotation module, piping and combination valve.

Result

Once installed, the Jet Aerator and pumps operated flawlessly and at finest levels as forecasted. Within 2 months, Rocky Point Metalcraft was able to finish the upgrade of the William Head Treatment Plant and was highly thankful to Xylem.



The combination valve (vacuum breaker & air release) and a 6" gate valve to manage the flow.

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