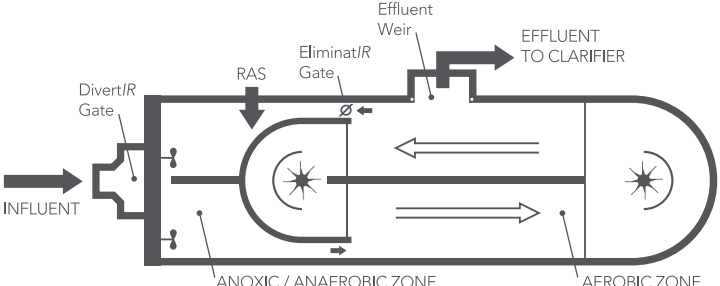




ADVANCED OXIDATION DITCH SYSTEMS

Maximum treatment, minimum effort

Meet stringent nutrient limits, reduce chemical and energy usage
and construct, operate and maintain easily

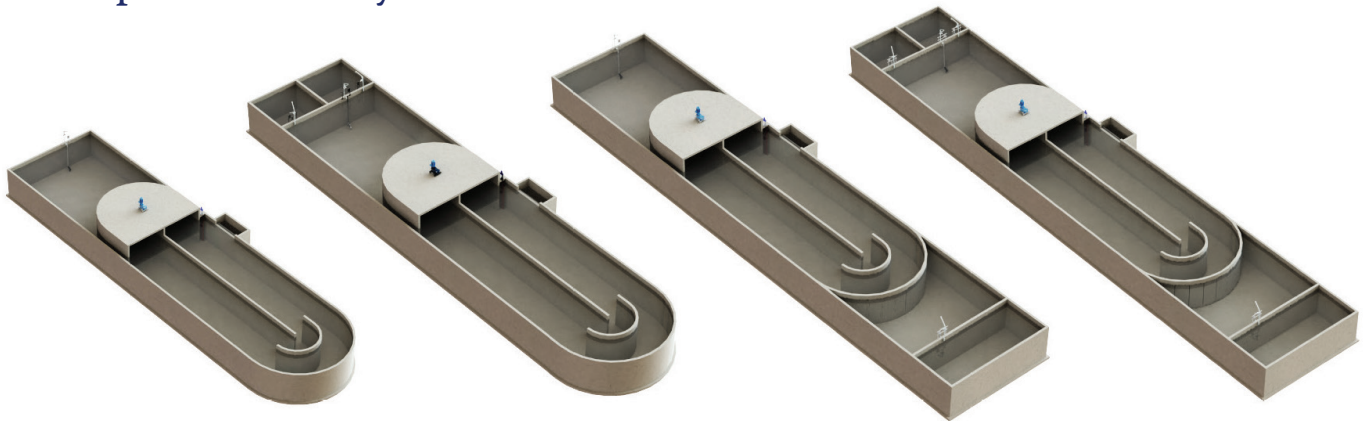


Bringing water to life®

Ovivo: an engineering process powerhouse

The Ovivo Process Team, which consists of decades of biological wastewater treatment plant design and innovation, has provided expertise and design assistance for wastewater treatment plants of all shapes, sizes, and effluent requirements.

The advanced oxidation ditch process family



	2-STAGE	3-STAGE	4-STAGE	5-STAGE
	denitIR® SYSTEM	A ² C™ SYSTEM	BARDENPHO® SYSTEM	BARDENPHO® SYSTEM
ANAEROBIC		●		●
1st ANOXIC	●	●	●	●
AEROBIC	●	●	●	●
2nd ANOXIC			●	●
RE-AERATION			●	●
EFFLUENT (mg/L)	BOD < 5.0 NH ₃ -N < 1.0 TN < 5-8	BOD < 5.0 NH ₃ -N < 1.0 TN < 5-8 TP < 1.0	BOD < 5.0 NH ₃ -N < 1.0 TN < 3.0	BOD < 5.0 NH ₃ -N < 1.0 TN < 3.0 TP < 1.0

Key features



ROBUST AND RELIABLE OPERATION



LOW COST OF OPERATION & MAINTENANCE



EXCELLENT PERFORMANCE



HIGHEST QUALITY EFFLUENT



LOW ENERGY USAGE

GREAT POWER TURNDOWN OF EXCELL® AERATOR

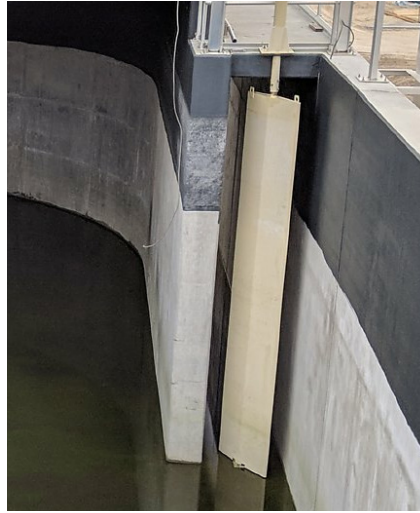
Power turndown is critical for proper operation of biological nutrient removal facilities and for cost efficiency. A properly designed Oxidation Ditch equipped with Excell® Aerator allows for power turndown of 80-90% without mixing limitation.

THE ELIMINAT/IR™ GATE - EASY CONTROL WITH NO PUMPS

The Eliminat/IR™ Gate replaces expensive IR pumps and older manual gates. Eliminat/IR™ Gate provides real time enhances control of nitrate reduction in your facility. IR channel delivers 10Q or higher.



Submersible Mixers



Eliminat/IR™ Gate



Oculus™ Control System



Energy Optimizer®- Automated Effluent Weir Gate



divert/IR™ gate



Excell® Aerator II

The oculus™ control system

The Oculus™ Control System is the “all-seeing eye” that maximizes nutrient removal, minimizes power costs and monitors selected process variables and equipments.

The Operator can access all control functions, set-points and trend charts from a custom, touch-screen interface. Using proper D.O. and effluent weir set-points determined by Ovivo’s extensive experience with Oxidation Ditch nutrient removal plants, the Oculus balances the need to minimize power consumption.



Advanced oxidation ditch systems: a forward looking approach

Ovivo® Oxidation Ditch (OD) System is a leading technology in wastewater treatment and biological nutrient removal. With over forty years of experience and more than 800 installations in North America, the OD System has proven to be the most rugged, reliable and forgiving treatment system available. Each OD System is engineered to achieve the highest quality effluent with the lowest cost of operation and maintenance. The OD System is universally praised for operational simplicity and dependable performance from start-up to the most demanding situations.

Ovivo® OD Systems offer the lowest number of aerators per basin compared to other oxidation ditch systems, such as those that use horizontal shaft aerators. This greatly simplifies installation and maintenance requirements.

At a minimum, an OD System consists of a “racetrack” style reactor basin with at least one vertical shaft, low-speed mechanical aerator, the Excell® Aerator, installed in the center of one of the turns. The basic OD System is capable of full BOD and Ammonia reduction. Nutrient removal is easily added to an OD System via the addition of anoxic and anaerobic selector zones, or even with simple, optimized operational strategies.

The OD System utilizes the Modified Lutzack-Ettinger (MLE) configuration for highly efficient denitrification. This process is known as the denitIR® System, where internal recycle (IR) flow is directed into the anoxic zone via a slip-stream channel using propulsion generated by the Excell Aerator. No additional energy for IR pumping is required. IR flowrate is varied by the EliminatIR™ Gate. The Oculus™ Control System automatically controls the aeration rate and IR flow.

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40 years of
Activated Sludge
Treatment and
Biological Nutrient
Removal



Top: The Excell® Aerator is installed at one or more of the channel turns and provides all aeration and mixing required for full nitrification and BOD removal.

Bottom: Anoxic and anaerobic basins are easily added for Total Nitrogen and Total Phosphorus removal in Ovivo's denitIR® configuration.