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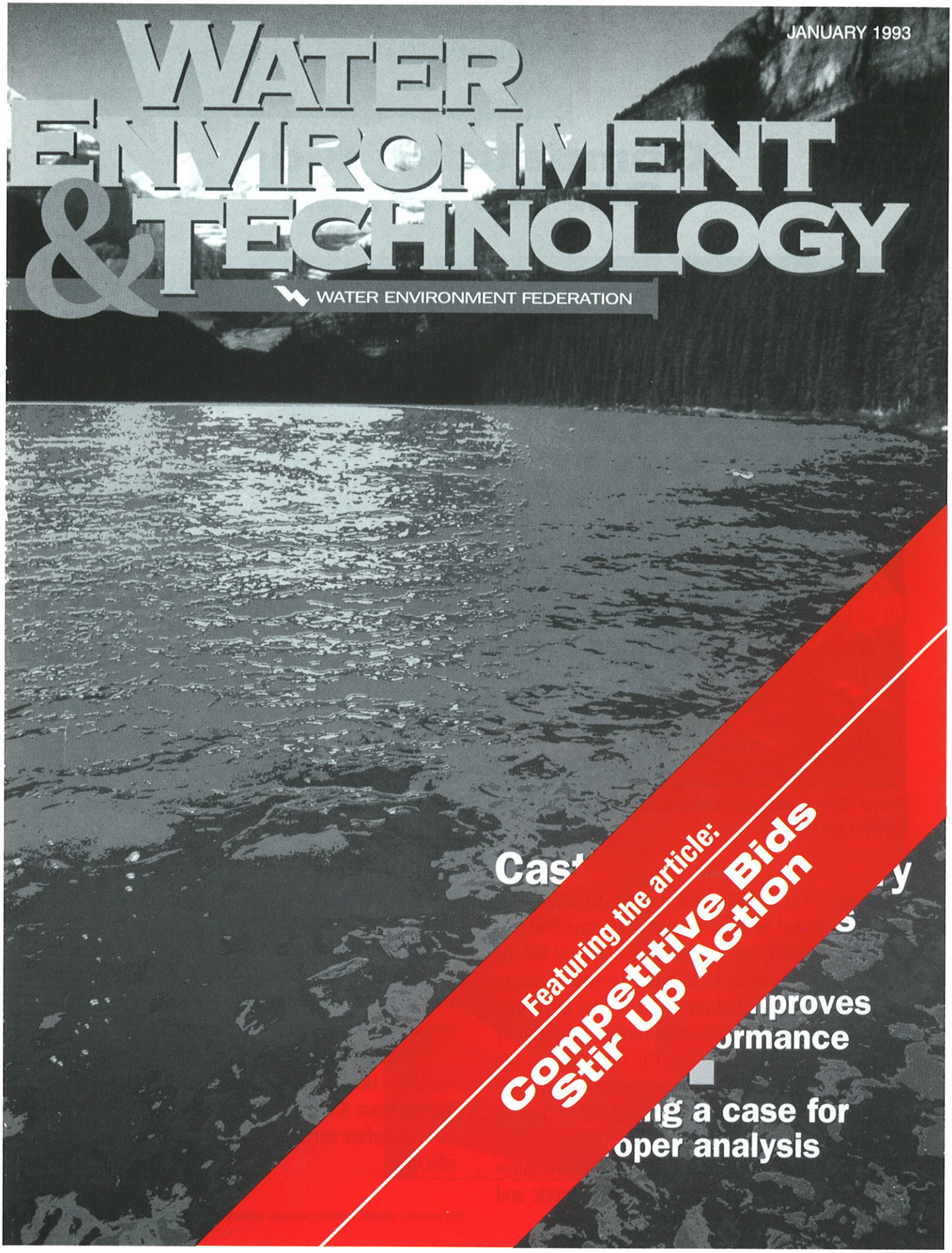
WATER ENVIRONMENT & TECHNOLOGY

WATER ENVIRONMENT FEDERATION



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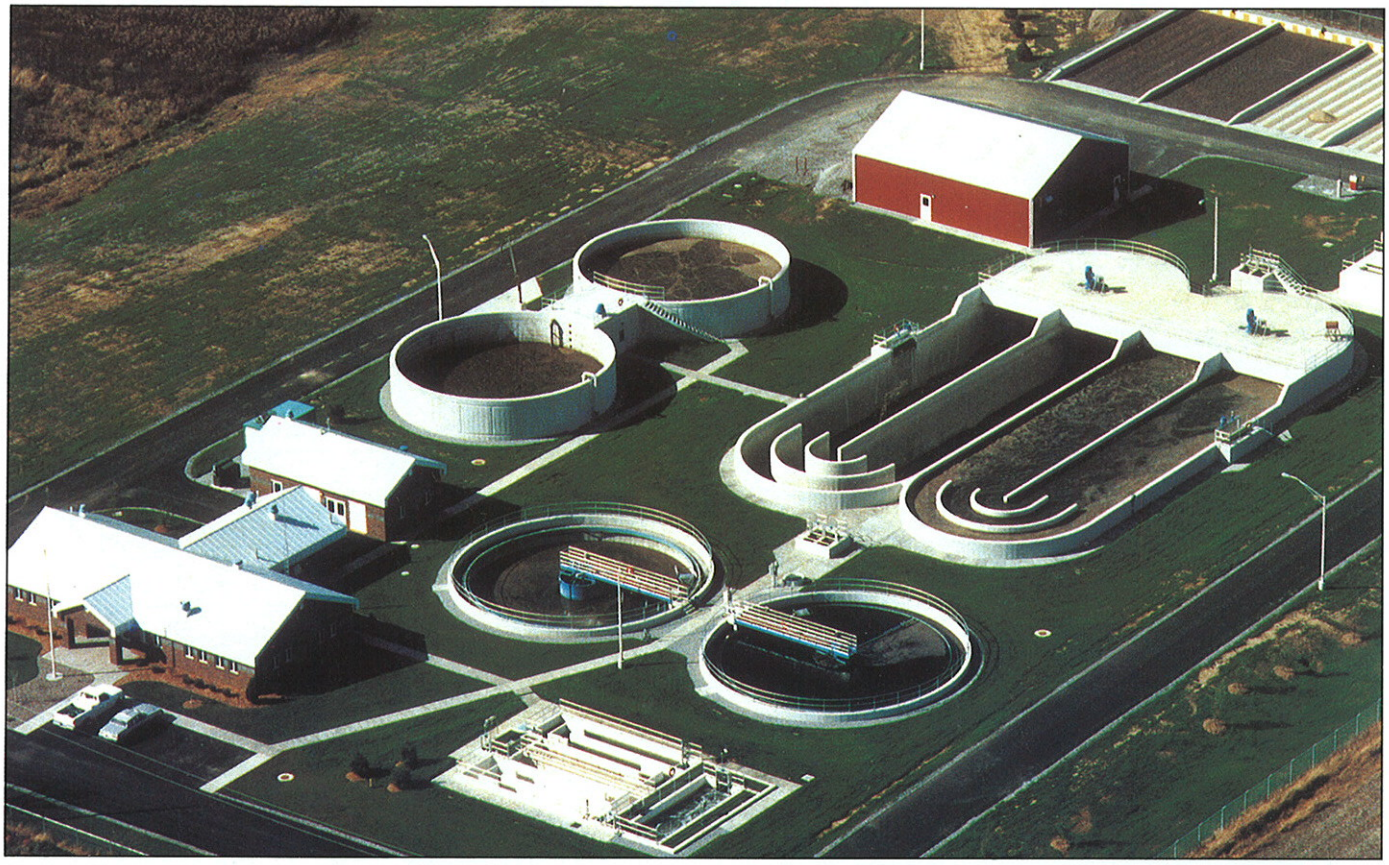
Competitive Bids Stir Up Action



Aerial view of the treatment plant in Sellersburg, Indiana featuring oxidation ditches with SIMCAR® vertical turbine aerators.

Designers of an oxidation ditch system in Sellersburg, Indiana decided to dispense with the time-honored tradition of specifying a single manufacturer for the vertical turbine aerators included in the system design. Instead, they specified both of the two currently available vertical turbine aerator models produced by two different manufacturers. The language in the specification did not explicitly or implicitly mandate the payment of royalty, license, or technology fees by the contractor to any manufacturer. To encourage delivery of a high-quality product at the lowest possible price, the specifications were completely generic and allowed for open and free competition between the manufacturers of these two aerators.

This is the first time that a generic specification has been used successfully for vertical turbine aerators in oxidation ditches without the payment of fees previously charged under the patent.

Most ditches use horizontally mounted brush aerators. However, in oxidation ditches with water depths from 3.6 to 4.8m (12-16 feet), the vertical turbine surface aerator has proven to be the most cost-effective.

Plant Effuent Requirements and Current Averages, in mg/L

Criteria	Summer requirement	Winter requirement	Current averages
Five-day carbonaceous biochemical oxygen demand	10.00	19.0	5.0
Total suspended solids	12.00	22.8	2.7
Ammonia	1.5	3.0	0.4

Generic specifications encourage open and free competition between manufacturers.

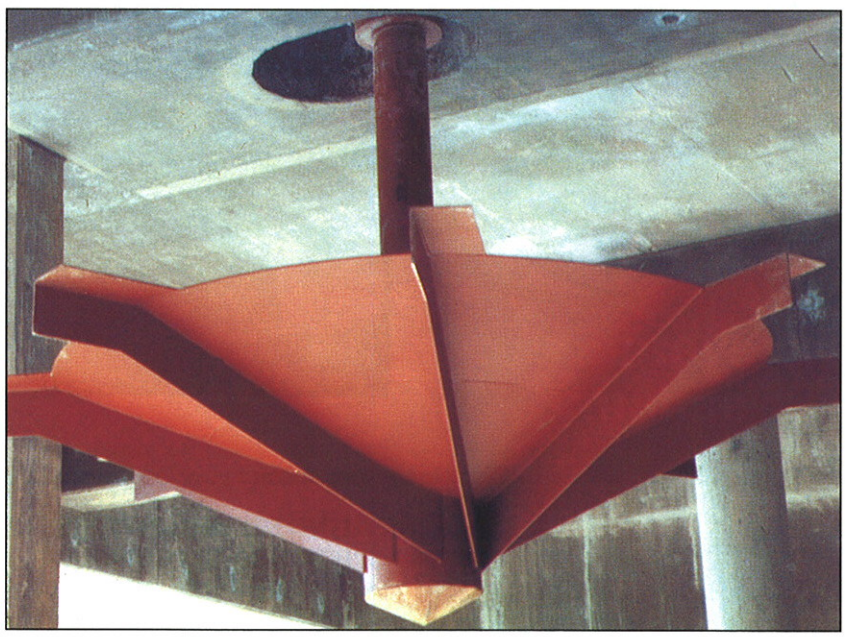
This system was patented from 1970 to 1987. During the life of the patent, project specifications usually noted the requirement of a royalty fee to the U.S. licensee for use of this technology. However, now that the patent has expired, the reference to this patent and other sole-source language in specifications are no longer necessary.

The design called for twin 66 l/s (1.5 mgd) oxidation ditches, each with a 3.24 meter-diameter (10.67 ft-dia) vertical turbine aerator. Twin external clarifiers were also designed to meet the effluent criteria for the system (See Table 1). Current averages show that the plant is producing a better quality effluent than the level cited in the permit. Each aerator impeller was designed with a twin speed, 56 kw (75 hp) motor and gearbox.

The water depth in the oxidation ditch was designed for a normal operating level of 3.9 m (12.7 feet) and a channel width of 7.3 m (24 feet). This is close to the optimal width-to-depth ratio of 2:1 for minimal hydraulic losses in the channel.

With both aerators in place, effluent quality from the facility has been well below levels cited in the discharge permit. Other projects throughout the country are now using such specifications to foster competitive bids for these devices.

*—**Jeff Ponist,** Commonwealth Engineers, Inc., Indianapolis, Ind..*



The purchase of vertical turbine aerators, such as this one, no longer requires the mandatory payment of separate royalty or technology fees.

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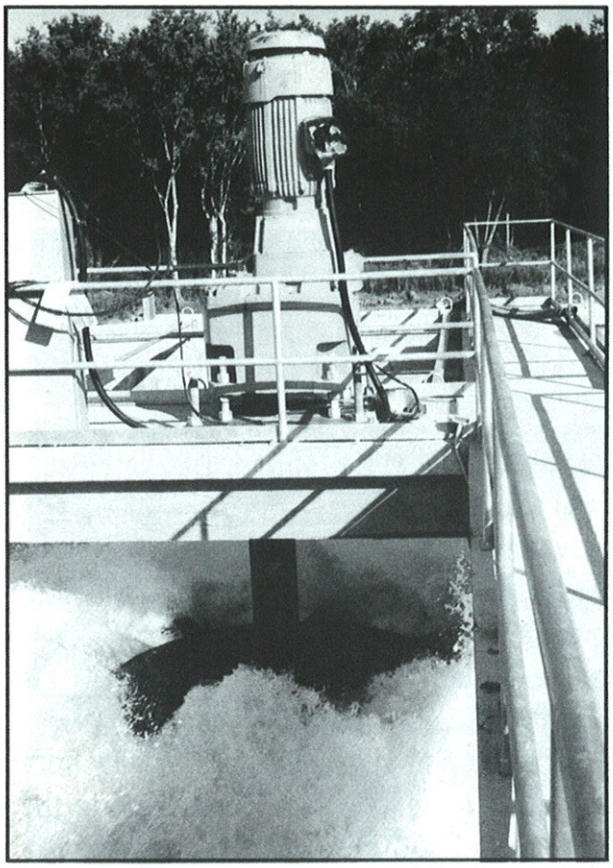

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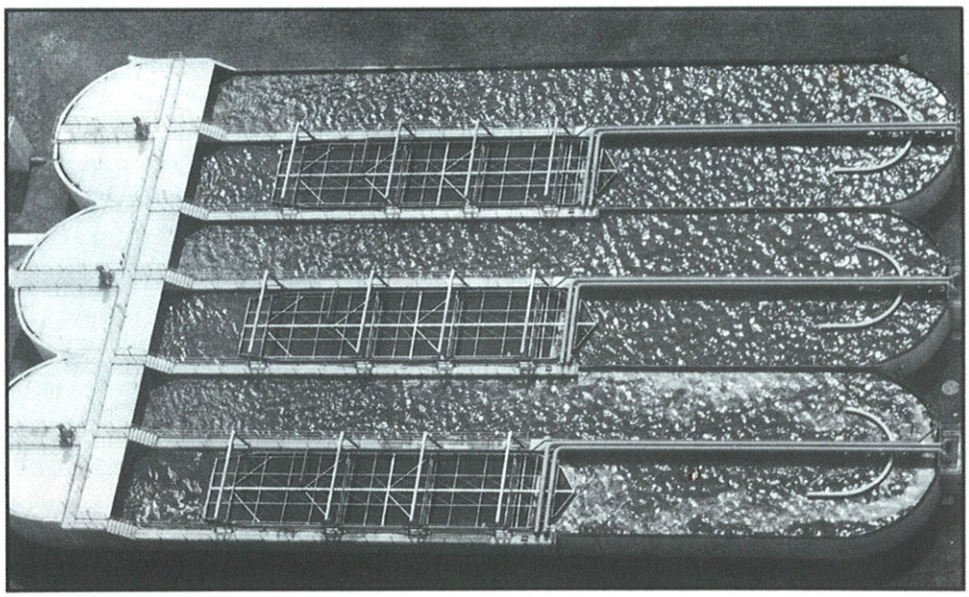

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