



*Flowing with Innovation*

## Blue Whale Microbar Screen Outperforms Perforated Band Screen

The city of Louisville, Ohio installed a **3 mm Or-Tec Blue Whale Microbar Screen** in its wastewater treatment plant in November 2018 to screen hair, wipes, plastics and other 'rags' from its influent wastestream. Louisville is a bedroom community with around 10,000 residents and a few light businesses. Its plant is designed to treat up to 6 million gallons of wastewater per day.

The 3 mm Or-Tec Blue Whale Microbar Screen replaced a 10-year old perforated band screen that was failing and had, in fact, been problematic from the start. "I was never happy with it (band screen) from when it was new," explains Chief Operator Rich Goebeler, "We always felt like it was only capturing maybe 50% or 60%." To compensate, operators used a hand rake located downstream of the band screen after aeration and before final clarifiers to remove four to eight 5-gallon buckets of material each day.

The band screen also needed a lot of repairs. Both the brush and pillow blocks on its bearings needed to be replaced after a few years. Then, after just six years, the stainless-steel keepers holding the rubber channel seals oxidized off.

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Dan Milsap, Service Director,  
Louisville, Ohio



*Or-Tec Blue Whale Microbar Screen*

*“First, we have the water savings, then the reduced maintenance.*

*I just feel that it is a very good piece of equipment and I would highly recommend it to anyone...”*

Rich Goebeler, Chief Operator, Wastewater Treatment Plant, Louisville, Ohio

“They were gone,” recalls Goebeler, “leaving debris to bypass the actual screen around the sides.” The band screen company offered a pricey “update” kit to fix them. This upset him. He recalls telling them, “But the other ones rotted off! Can’t you give us a price break? I mean, they were bad after six years!”



**3mm Or-Tec Blue Whale Microbar Screen in Louisville, Ohio**

Hundreds of the band screen’s chain plates were also bent, allowing even more material to bypass the band screen. Hand raking became a constant chore. “The guys would go out three or four times a day and clean off the (hand rake) screen,” explains Service Director Dan Milsap. “They would rake buckets, and buckets and buckets of hair and other material that was going through the (band) screen.”

In short, Goebeler says, after just ten years, the band screen needed a complete overhaul. With repairs approaching \$20,000, the city decided to abandon it.

After research, recommendations from another Ohio wastewater plant and bidding, Louisville chose the 3mm Or-Tec Blue Whale Micro Bar Screen. “I was impressed with the 3mm opening that they (Or-Tec) had and what it was pulling out of the system,” Milsap says.

The city has not been disappointed. “The Blue Whale has been great,” Milsap says. “I believe we have been very fortunate. It has kept up with our peak flows at the plant. It’s probably been one of the best products that we purchased over the years.”

The new Or-Tec 3mm Blue Whale Microbar Screen is removing enough debris to fill a 2 cubic yard dumpster each week. This is in sharp contrast to the band screen, which was filling just one third of the dumpster weekly.

### **Application Conditions**

- ⇒ **3mm screen**
- ⇒ **200-500 mg/L TSS**
- ⇒ **4,166 gpm instantaneous flows**
- ⇒ **6 mgd design flow rate**

As expected, hand raking has decreased sharply. Goebeler says that operators are hand raking just a ½ gallon bucket of debris a day, and he expects it to continue to decline. “Our system is still cleaning out,” he explains, “I think we will keep getting less and less debris out.”

Goebeler is impressed with the ease of maintenance of the 3mm Or-Tec Blue Whale Microbar Screen. “It’s something that we don’t have to give constant attention to,” he notes. “It’s just down there running, doing its job.”

He says that the only maintenance has been routine. Operators grease the main shaft bearings every two weeks. Downstream maintenance has also decreased., including less cleaning and fewer replacement parts. “It’s saving on man hours. It’s saving on time. We couldn’t be happier with it,” Milsap says.

Water savings are also enormous. The 3mm Or-Tec Blue Whale Micro Bar does not require wash water. Goebeler says that the old band screen used 60 gallons of wash water per minute.

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*3mm Or-Tec Blue Whale Microbar Screen in Louisville, Ohio wastewater treatment plant.*

### Band Screen vs Or-Tec 3mm Blue Whale Microbar Screen

	<b>Perforated Band Screen</b>	<b>Or-Tec 3 mm Blue Whale Microbar Screen</b>
<b>Wash Water</b>	24,000-374,000 gallons daily	No wash water.
<b>Capture Rate</b>	50-60%	95% plus
<b>Debris Removed</b>	0.33 cubic yards/week	2 cubic yards/week
<b>Brushes</b>	\$12,000-\$15,000 upgrade	No brushes.
<b>Product Life</b>	10 year overhaul needed	20 years plus

*“The whole (Or-Tec) crew was great...”*

Dan Milsap, Service Director,  
Louisville, Ohio

On average, this meant that it used about 26,000 gallons of wash water per day, but he says even that is a ‘very conservative’ estimate. He says that because the former screen ran based on the level in the channel, rainy or wet periods would cause it to operate continuously – using approximately 16,440 gallons per hour, or 394,560 gallons per day.

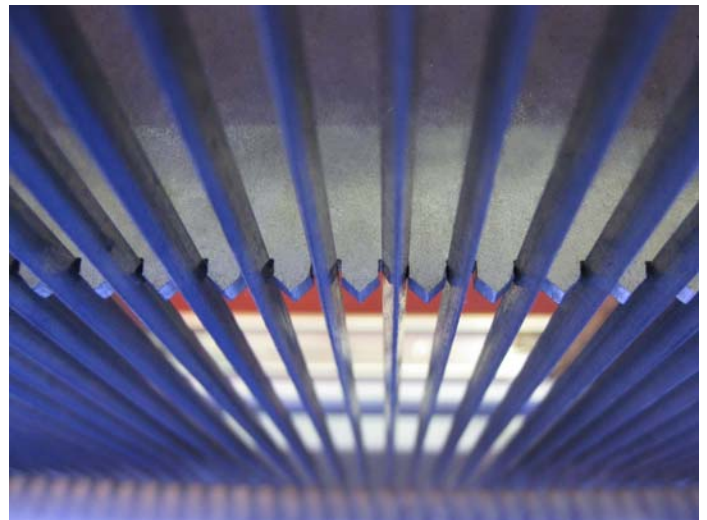
“First, we have the water savings, then the reduced maintenance,” Goebeler says. “I just feel that it is a very good piece of equipment and I would highly recommend it to anyone else.” Milsap agrees.

Goebeler and Milsap say that working with Or-Tec was terrific. Milsap was especially impressed with the help the company provided during installation.

Milsap said Or-Tec was right there on site helping. “You always wonder how the transition is going to go when you are replacing a piece of equipment of that size and importance, but it was seamless,” he says.

“(Or-Tec) helped us out a ton with the installation. They were there answering questions. They pretty much led the installation portion of the project and we’re grateful for that. It really, really helped us out.”

“The whole (Or-Tec) crew was great to deal with,” Milsap emphasizes.



*Or-Tec Blue Whale Microbar Screen*

**The OR-TEC Blue Whale Micro Bar is completely unique screen because it can screen to openings as small as 1mm while not blinding due to its tapered bar construction and penetrating rake teeth. This US patented screen is manufactured in an ISO 9001 and ISO 14001 factory and eliminates downstream matting without the use of wash water or brushes. This very high removal rate vastly improves the rest of the wastewater treatment plants operation by reducing fouling of pumps, valves and other rotating equipment.**