

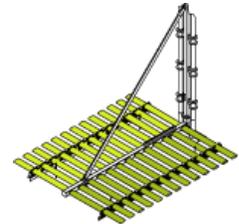
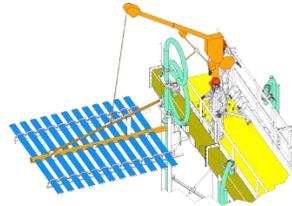
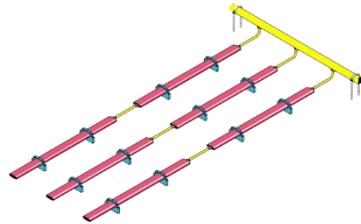
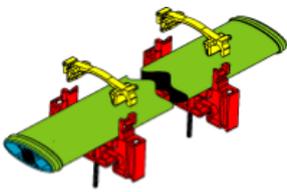
**TECH MEMO:
Oxidation Ditch Fix to Retrievable Aeration**



PRESENTED TO:

**All Offices
Winter 2026**

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Oxidation Ditch Fix & Conversions

Issue: Oxidation Ditches were originally designed for small WWTPs with high TCEQ discharge limits. Apparently, owners were caught by surprise when they learned their process lacked the ability to maintain their DO limits during high summer temperatures or high flows. The process begins to fail when the process exceeds 70% of its rated capacity in some instances.

Resolution: Performance can be restored by supplementing or replacing the existing aeration approach. The objective is simply to provide adequate aeration capable of maintaining required DO levels throughout the capacity range of the process while still providing anoxic mixing.

The current TCEQ regulations favor RETRIEVABLE aeration and mixing technologies that DO NOT require basin dewatering. When this approach is deployed, redundant basins are not required. Removable components are therefore the least cost alternative of upgrading or converting WWTPs with failing Oxidation Ditches.



Oxidation ditch retrofit for retrievable aeration approach via Jaeger-Aeration's OxyStrip™ & OxyLift™ System



Retrieved rack on bridge mounted design with hoist



Retrieved rack on wall mounted design

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Two Paths for Restoring D.O. Levels

Option A). Aeration Upgrade: In cases when the application can be further utilized with supplemental aeration only, then installation of retrievable strip aerators combined with blowers is sufficient. Blowers can range from small VFD-controlled PD blowers to large scale APG Neuros Turbo blowers.

Option B). Process Conversion: When the capacity of the WWTP requires a large-scale performance realignment, then a complete array of retrievable strip diffusers and blowers can be retrofitted in the existing basins to return the process to its specified DO levels. The complete conversion meets the revised TCEQ 317 regulations for removable aeration devices, thereby eliminating the need for redundant basins. Anoxic zones are retained. BNR is just a small step away as the strip aerators include an internal check valve to prevent fouling with intermittent use.



Phase I – Replacement of Rotors



Concentric Ring Design



Retrofit of Rotating Bridge Facility



Retrofit of Aspirating Aeration to OxyLift

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Jaeger-Aeration Key Takeaways

- Supplier since 1960 – The Pioneer of membrane diffusers
- OxyLift system provides redundancy and efficiency
- 100% retrievable for redundancy
- Any basin configuration, Round, OxDitch, Rectangular
- New and retrofit projects
- BNR performance for TN <5 ppm and TP < 1 ppm
- Lower O&M for equipment maintenance
- Up to 60% lower energy than mechanical aeration
- Also provide fixed grid OxyDisc™, OxyTube™, and OxyStrip™
- TCEQ 217 regulations for single basin design

Installation History

Jaeger-Aeration has been upgrading and converting oxidation ditches for fifteen years. References exist from coast to coast, with the closest references to Texas located outside of Houston.

Jaeger-Aeration has two operational oxidation ditch fixes in Texas. Both are large enough to justify the power savings efficiency of APG Neuros Turbo Blowers.

Texas References

- Huntsville, TX
- Mont Belvieu, TX

More regional references available upon request.

Long-Term References

- Farmington, MO
- Gainesville, GA

Mini Case Studies for these projects are provided below.

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City of Farmington, Missouri

OxyStrip™ Retrofit Delivers Redundancy and Up to 50% Energy Savings

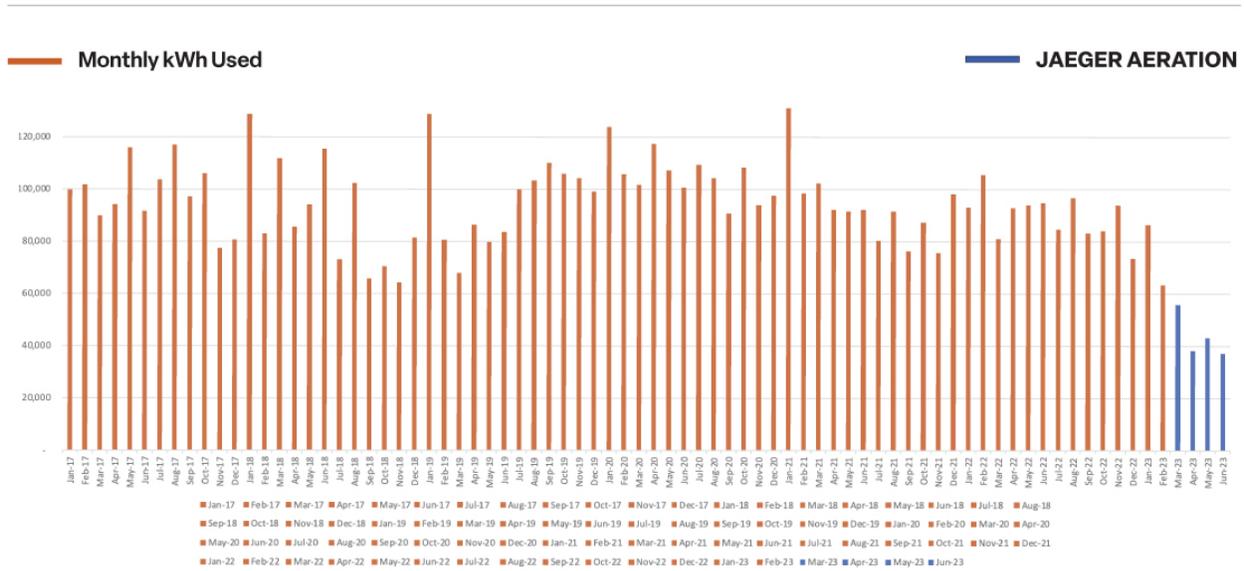
The City of Farmington’s Northeast WWTP faced aging mechanical aerators, inconsistent DO levels, and increasing energy costs. As flows increased, the plant struggled to meet TN and TP discharge limits under its NPDES permit. The city needed a fast, low-risk solution that could be installed without interrupting operations.

Jaeger-Aeration supplied a retrievable OxyStrip™ diffuser system, replacing twelve surface aerators with four fine-bubble units installed directly in the oxidation ditch. The retrofit was completed in less than one week during a low-flow period, with no basin dewatering or downtime required.

Results & Benefits

- Reduced energy costs by up to \$6,000/mo.
- Installation completed in **under one week**
- **Maintained treatment operations** throughout retrofit
- **Full DO and nutrient compliance** (TN < 5 mg/L, TP < 1.4 mg/L)
- **Redundancy** and long-term reliability introduced to the process

Farmington East WWTP Power Consumption





Farmington, MO: Anchoring of SS rails with cofferdam for dry conditions



Farmington, MO: Final Assembly

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City of Gainesville, Georgia

Retrievable OxyLift™ Restores Performance Without Downtime

At Gainesville’s Flat Creek WWTP (12 MGD), the city’s vertical turbine aerators (3 lb O₂/hp/hr at 1,200 hp) were replaced with Jaeger-Aeration’s OxyLift™ and OxyStrip™ fine-bubble system (5–6 lb O₂/hp/hr at 600 hp), cutting power demand roughly in half while increasing oxygen transfer efficiency. Because no redundant basin was available, Jaeger provided process redundancy through its retrievable rack design, enabling installation and future maintenance without dewatering.

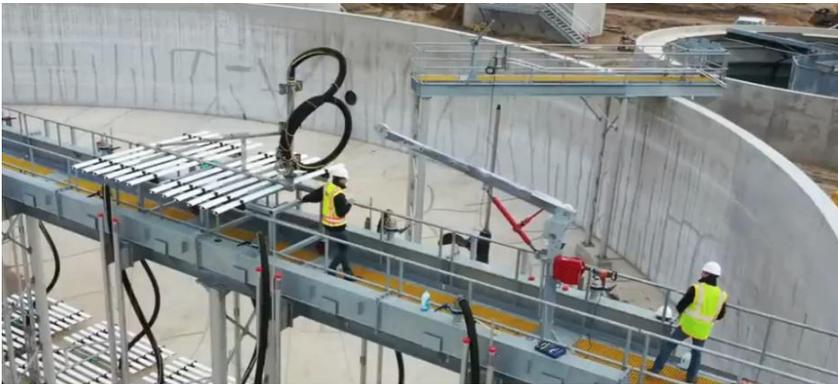
Each OxyLift™ rack contains 250 nine-inch disc diffusers, providing scalable aeration that can be serviced in minutes—no crane required. The design allows up to 16,000 scfm of air today and 32,000 scfm in the future for both trains, supporting nitrification and controlled denitrification. The project, delivered with Hazen, Reeves+Young, and Templeton, stayed under budget and on schedule.

Results & Benefits

- **Zero downtime** during installation
- **Up to 50% reduction in power consumption**
- **Redundancy built into the aeration design**
- **Easy maintenance** — racks removed in under 5 minutes
- **Improved TN/TP compliance** with efficient oxygen control

Jaeger-Aeration Case Study – Retrievable Fine-Bubble Aeration System Installation:

<https://youtu.be/jrx6vHFMT2c>



Each rack can be lifted with a portable hoist, placed on an OxyCart, and moved to the basin edge for servicing, preventing tools from being dropped. A standard feature with Jaeger-Aeration.



The bridge was installed utilizing the center wall of the basin, SS legs, SS air header, and the OxyLift™ / OxyStrip™ design.

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