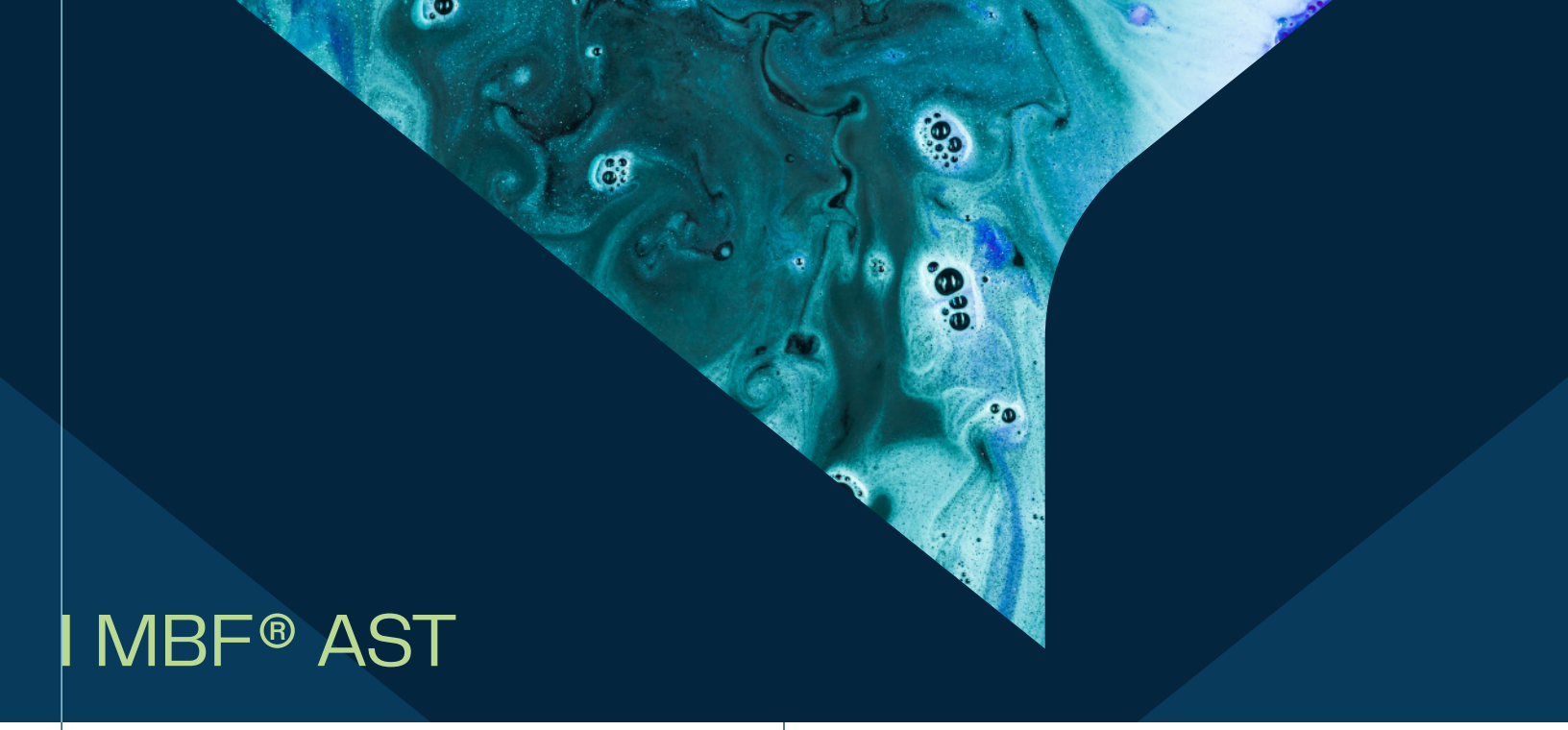


MBF® AST

Secondary Produced Water Deoiling

With the use of Microbubble Flotation (MBF®), Enerflex can successfully integrate produced water treatment services directly into an above-ground storage tank (AST). By using portable treatment components, including skidded GLR® (Gas Liquid Reactor) and chemical dosing systems, treating produced water directly in an AST eliminates the need for most surface facility equipment. Capacity can be easily scaled by adjusting retention time instead of resizing permanent infrastructure. Rather than overtreating stored water in anticipation of quality degradation, this service treats on demand, avoiding the limitations of a narrow operating range.

How It Works

The system uses fluid hydraulics through multiple chambers, coupled with MBF, to optimize oil-in-water (OIW) separation. Produced water enters the chambers sequentially as microbubbles are introduced. Oil is lifted upon the bubble layer and is skimmed off by floating skimmers, enabling enhanced oil recovery. The water then flows into the next chamber, where more microbubbles are introduced for further OIW separation. This process is hydraulically driven through all chambers, resulting in the discharge of clean water, with over 99% oil recovery. The system recirculates water through the AST to maintain consistent water quality while enabling real-time monitoring and process control.

Key Benefits

Cost Saving

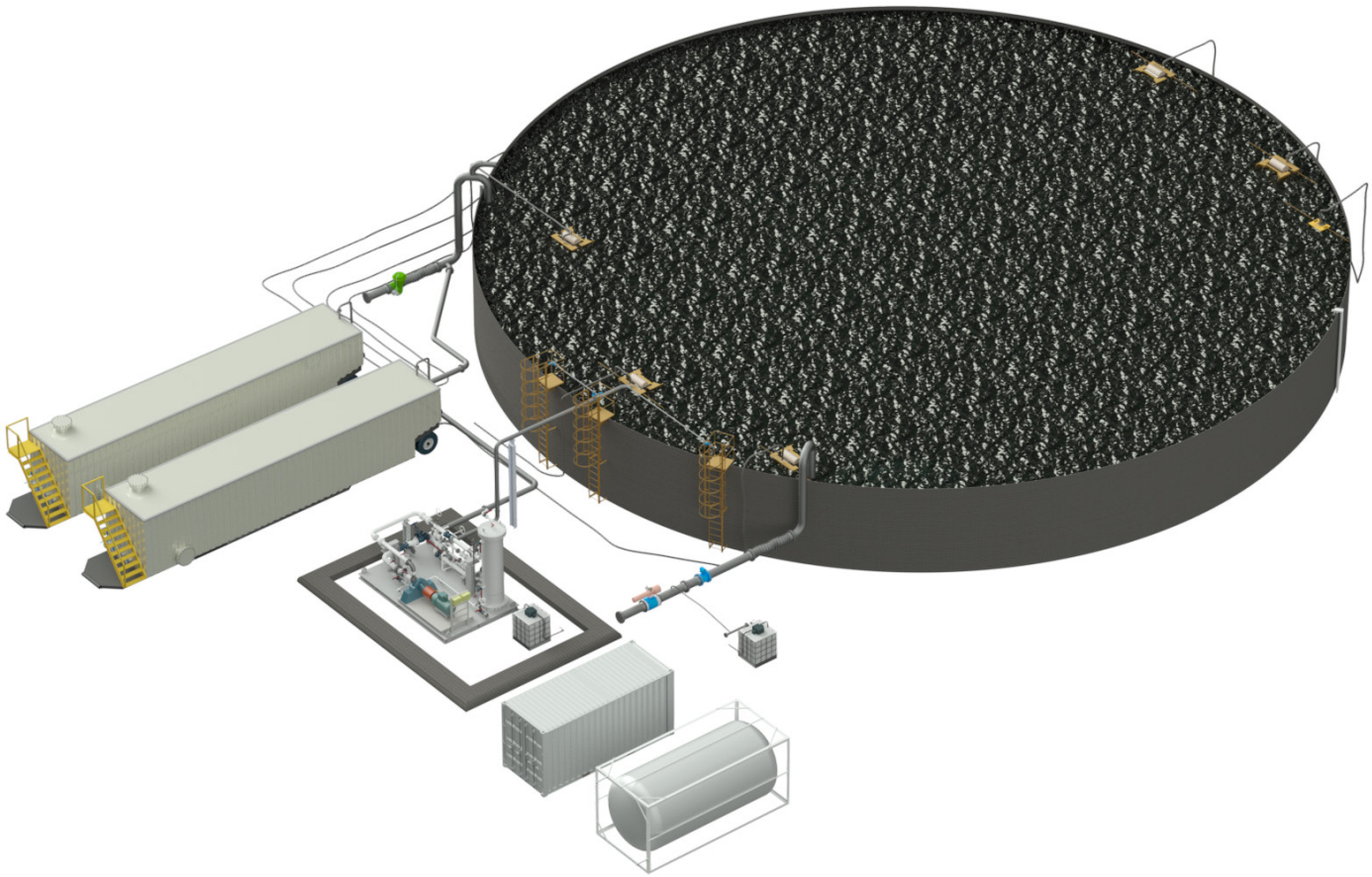
- Eliminates the need for complex, fixed-treatment infrastructure
- Easily retrofit existing tanks
- Integrated treatment, storage, and oil recovery reduces CAPEX and OPEX
- Treat as needed to reduce chemical costs, while extending the usability of the stored water
- Combines gravity tank and induced gas flotation processes for lower total costs
- Lower install costs with less equipment and easier tie-in

Better Performance

- Enhanced oil separation through MBF and sequential treatment
- Multi-chamber design buffers variations in flow rate and oil concentration
- Residence time allows system to handle upset scenarios
- Guaranteed performance results with our design validation and characterization services

Flexibility

- Scale treatment capacity in real time based on actual volumes and operational needs
- Portable treatment components
- Shorten the lead time to be frac-ready in weeks instead of months
- Real-time monitoring and optimization of performance



Standard Features

- MBF technology via Gas Liquid Reactor (GLR®)
- Full automation with various control philosophy options

Materials of Construction

- GLR vessel: internally coated carbon steel
- Auxiliary Tanks: internally coated carbon steel

Standard Options

- 1–5 year service terms
- New-build or retrofit existing tanks
- Water characterization services
- Chemical selection services

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