



Smith & Loveless Inc.

Protecting Water. Protecting People.™

OXIGEST[®] MBR[™]

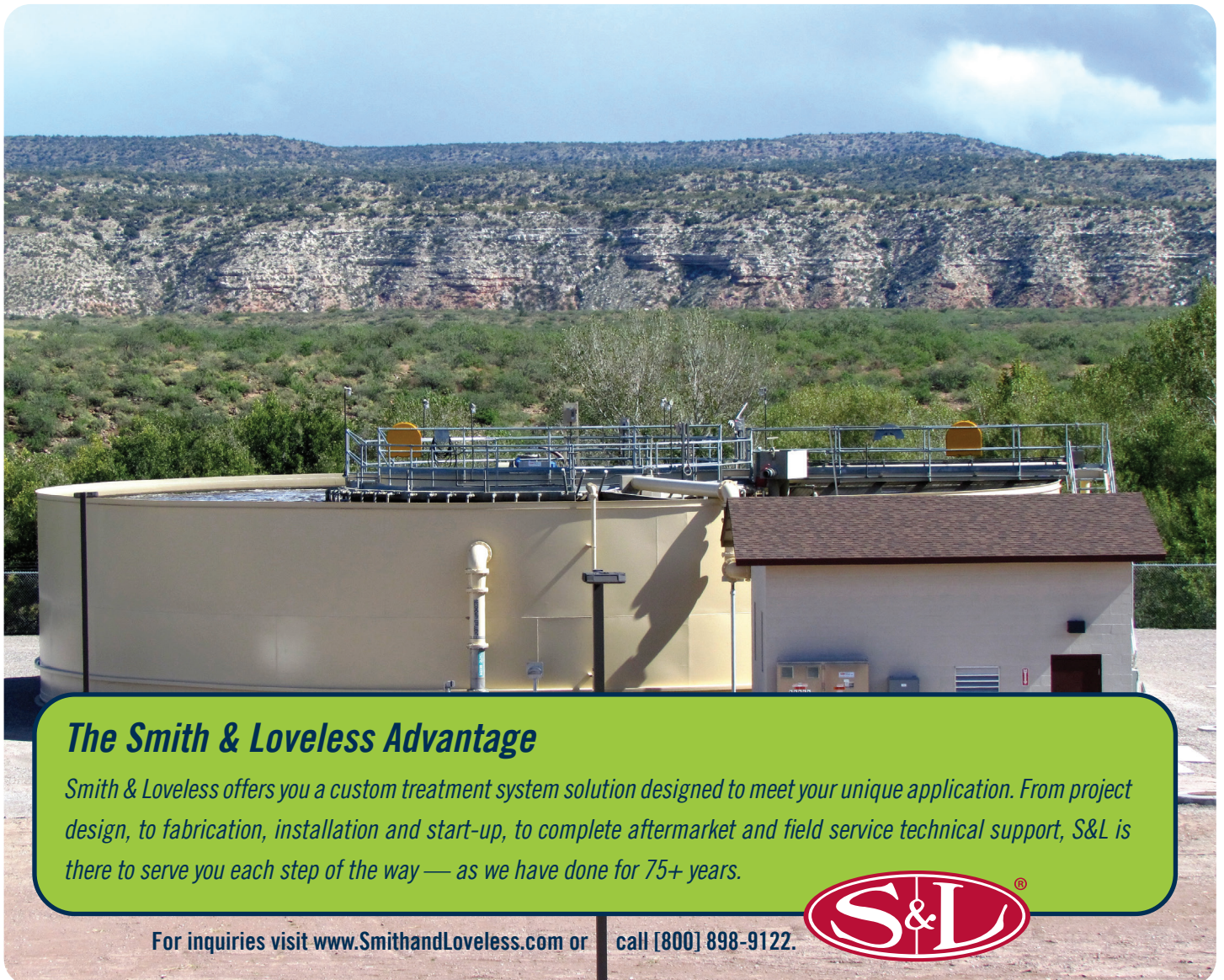
Rapid-Build MBR Treatment Plant Solutions
for Flows 0.1 MGD - 3 MGD [380 m³/d - 11,350 m³/d]



OXIGEST[®] MBR[™]

Smith & Loveless combines the proven field-erected **OXIGEST[®]** wastewater treatment system with efficient S&L Membrane BioReactor [MBR] treatment tanks for applications with stringent effluent requirements and flows ranging from 0.1 MGD - 3 MGD+ [380 m³/d - 11,350 m³/d]. The **OXIGEST[®] MBR[™]** design encompasses various treatment zones like flow equalization, aeration, anoxic, anaerobic and sludge storage [inside space-saving, field-erected, concentric tankage] with external MBR filtration [factory-built tank(s)]. This smart combination provides advanced treatment with process zone flexibility to meet specific effluent goals, including nutrient removal, water reuse, and direct or indirect discharge. Plants are designed, built and erected rapidly, saving time and money vs. conventional concrete-built in-place treatment plants.

The **OXIGEST[®] MBR[™]** is equipped with smart components that offer advanced process automation throughout the system's operation — all of which can be controlled efficiently with S&L's **QUICKSMART[™]** automated control system and monitoring, using a touchscreen interface. The **OXIGEST[®] MBR[™]** is a complete membrane bioreactor system with CA Title 22 approved membranes.



The Smith & Loveless Advantage

Smith & Loveless offers you a custom treatment system solution designed to meet your unique application. From project design, to fabrication, installation and start-up, to complete aftermarket and field service technical support, S&L is there to serve you each step of the way — as we have done for 75+ years.

For inquiries visit www.SmithandLoveless.com or call [800] 898-9122.



Optional Process Flow Diagrams and System Data

OXIGEST MBR™ provides multiple process options to meet your particular effluent goals. Three different examples are shown below. Each field-erected circular **OXIGEST®** bio-plant is complemented by factory-built S&L MBR Tank[s] for superior effluent quality.

Effluent Quality

Achieve **Biological Nutrient Removal [BNR]** and **Water Reuse**.

BOD:	< 3 mg/l
TSS:	< 3 mg/l
Turbidity	< 1 NTU
TN:	< 3 mg/l*
NH ₃ :	< 1 mg/l*
TP:	< 0.05 mg/l*

*Achievable with optional process selections



S&L MBR Tank
[factory-built with membranes]

S&L Membrane Data

California Title 22 Approved for **Water Reuse**.

Type:	Submerged PVDF
Design Flux:	Typical: 13 gpd/sf [22.1 l/mh]*
Trans Membrane Pressure:	Range: 0.50 - 2.00 psi [35 - 138 mB]

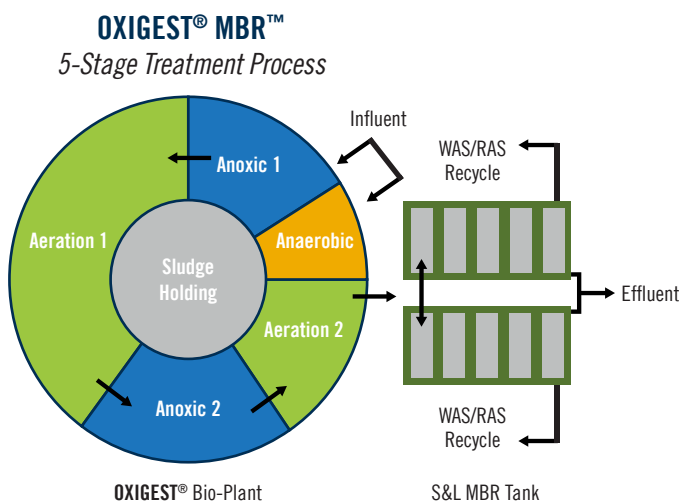
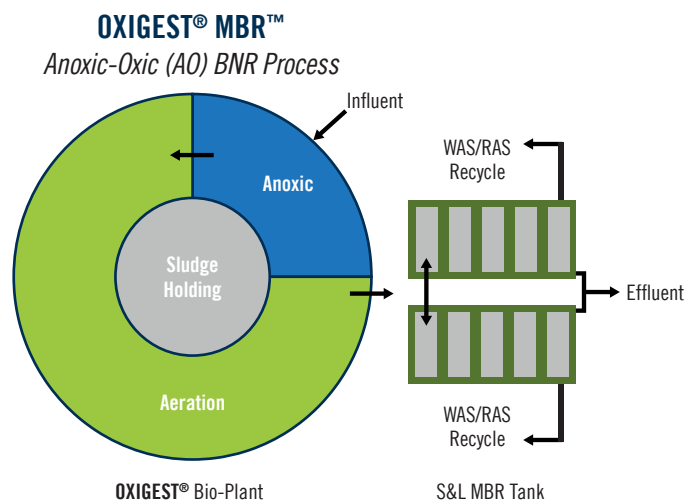
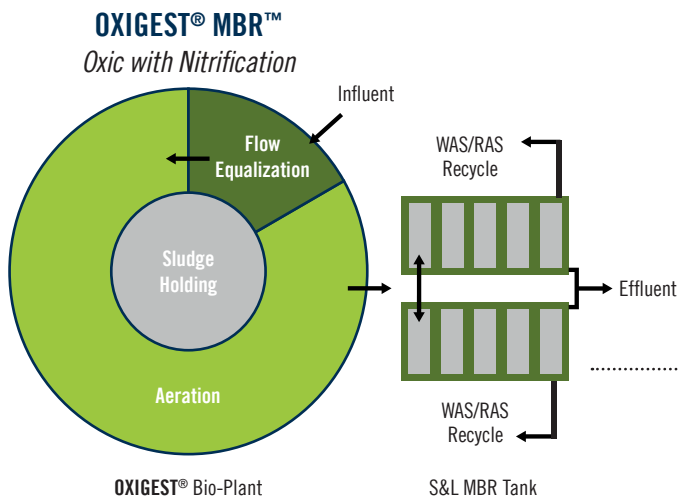
*Actual flux rate can vary based on temp, waste characteristics, and flow conditions.

Featured Options

- Remote monitoring
- Enhanced process instrumentation
- Stainless steel tankage, piping, and components
- Process zones for enhanced nutrient removal
- Energy-saving, precision D.O. and blower control
- Membrane chemical cleaning skid
- Aluminum or 316 stainless steel cable trays
- Field-erection services

OXIGEST® MBR Benefits

- Achieve effluent goals for **BNR & Water Reuse**
- Lower capital costs vs. concrete built-in-place plants
- Concentric tankage reduces footprint and yard piping
- Factory-built MBR tankage ships to jobsite
- In-house process and design support services
- Backed by 60+ plus years experience of bio-plant design



OXIGEST[®] MBR[™]

Rapid-Build MBR Treatment Plant Solutions for Flows 0.1 MGD - 3 MGD

[380 m³/d - 11,350 m³/d]

High-Rate Treatment

Multiple biotreatment processes + MBR allow you to meet stringent effluent limits

Cost-Saving

Steel tankage layout minimizes footprint, yard piping, construction time, and capital costs

Smart Automation

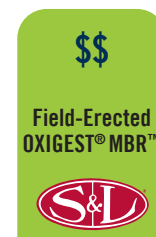
Intuitive controls and instrumentation that provide process automation and monitoring

Simplified O&M

Easily perform maintenance from walkways; Automated processes ease daily operation

OXIGEST[®] MBR[™] Advantages vs. Built-in-Place Concrete Treatment Plants

Field-erected OXIGEST[®] MBR[™] steel treatment plants by S&L offer significantly less capital and operational costs than fully concrete built-in-place plants of the same capacity. Up front, S&L plants install more quickly and cost-effectively through quality-controlled manufacturing and time-efficient on-site assembly. OXIGEST[®] MBR[™] designs can offer smaller footprints and less total yard piping, which can reduce capital costs to less than half compared to conventional concrete plants. Plants come with factory-finished carbon steel or optional stainless steel tankage, piping and components for complete and hybrid steel-concrete arrangements.



Typical Project Cost Differential

