

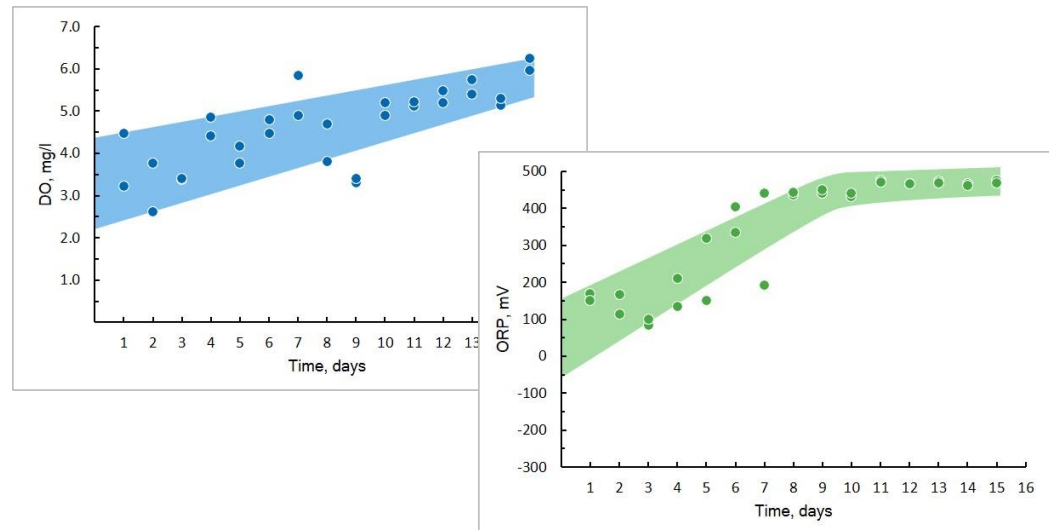
Case study

- Two water storage pits of similar size
 - Pit 1 received discharge from tank battery
 - Solids control & additional separation
 - Pit 2 received flow from Pit 1
 - Storage for reuse



- Facility objectives
 - Stabilize water quality for reuse
 - Control odor
- Treatment goals
 - Decrease chemical load that destabilizes quality
 - Maintain conditions to prevent SRB blooms

- Water conditioned for 15 days with MOXI-AIRE
 - Both pits recirculated during conditioning



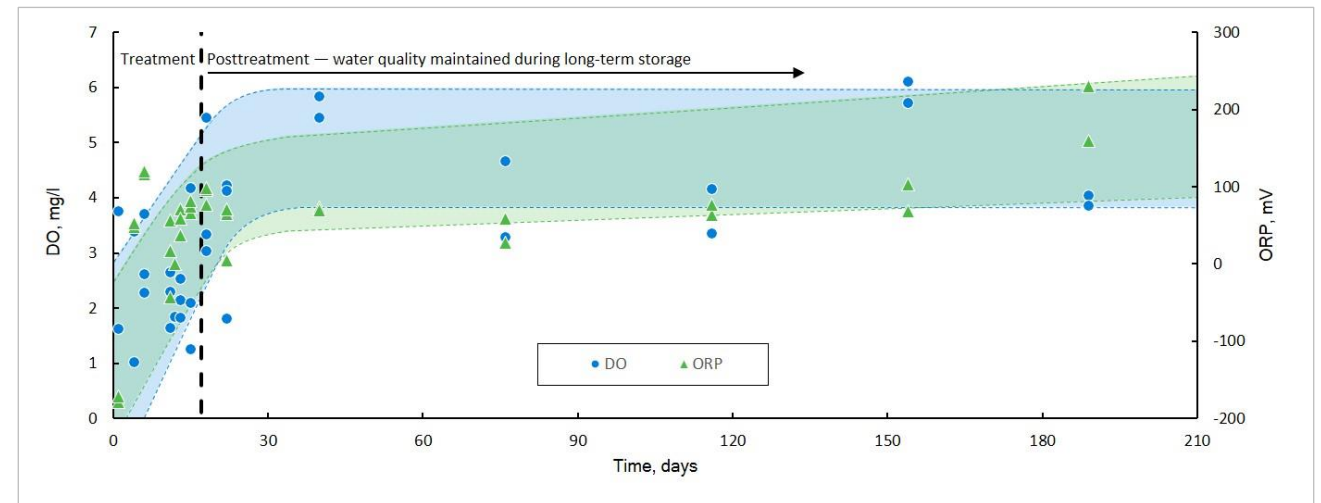
- Water stability monitored 60 days posttreatment
 - DO held >3.0 mg/l
 - ORP stable at +385 mV
 - $H_2S_{(aq)} < 0.5$ mg/l

Case study – long-term quality preservation

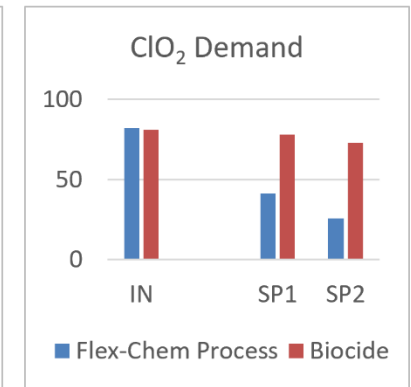
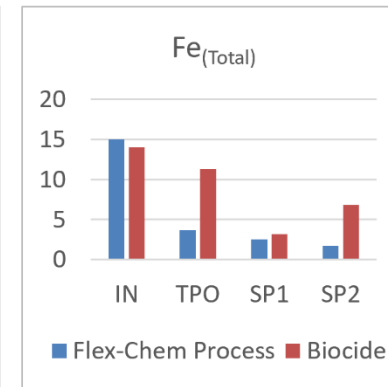
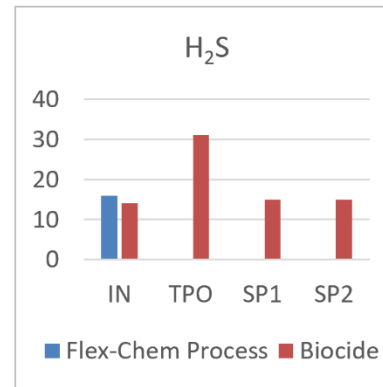
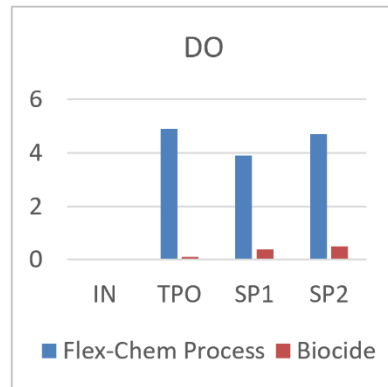
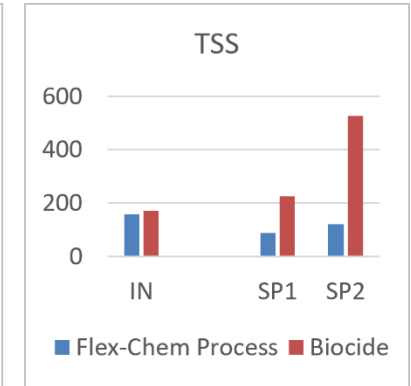
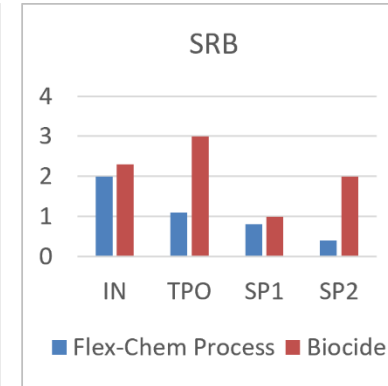
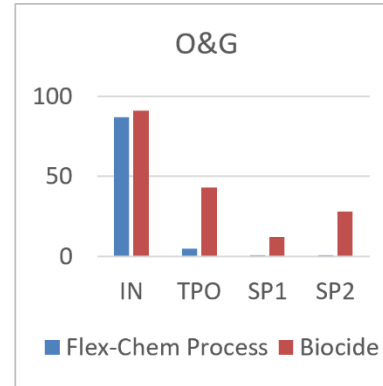
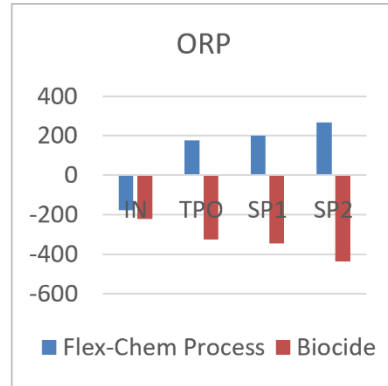


- Two water storage pits
 - Pits receive produced water discharge for reuse in field development
 - History of quality deterioration during storage
- Facility objectives
 - Control nuisance odor
 - Preserve water quality for future reuse
- Treatment goals
 - Prevent sulfide odor and SRB blooms
 - Decrease chemical load to maintain quality

- Pit 1 conditioned with MOXI-AIRE for 15 days
- Pit 1 water quality 6 months posttreatment
 - Quality maintained without additional treatment
 - No stagnation, SRB activity inhibited
 - H_2S production suppressed
 - $H_2S_{(aq)}$ stayed <0.5 mg/l



Quality Comparison of Water for Reuse Treated by Flex-Chem process vs Oxidizing biocide



IN – Inlet

TPO – Treatment Pit Outlet

SP – Storage Pit (water shipped to frac)