ANAMMOX FOR SIDE STREAM TREATMENT OF EFFLUENT
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Rationale:
• Dewatering of biosolids at Tres Rios WWTP produces 0.5 mg/day of effluent with 1000 ppm NH₄
• Effluent re-enters head works and extra O₂ needed for nitrification
• Adds significantly to energy costs (30% Total energy costs)
• Need to remove the NH₄ from the effluent prior to re-entry to headworks

Objectives:
• Use Anamox side stream treatment to remove NH₄ from effluent with significant cost savings
• Progress from lab scale to pilot scale to full scale treatment
• Utilize next generation sequencing to monitor microbial consortium (WET Center focus)
• Evaluate incidence of viruses in the water obtained from biosolids and the influence of anamox on virus inactivation (WET Center focus)

Approach:
• Utilize Anamox bacteria provided by UA faculty member Professor Jim Field
• Collaborate with Dr. Field and Pima County Wastewater to establish pilot scale treatment at WEST
• Correlate next generation sequencing data with efficacy of NH₄ removal
• Analyze effluent water before and after anamox treatment for viruses

Key Deliverables:
• Proof-of-concept for NH₄ removal
• Full-scale, real-world side stream treatment
• Process control via next generation sequencing
• Insight into the influence of anamox on virus inactivation
• $0.5m savings per year for Pima County

Project Status:
Ongoing 2018