



U.S. National Science Foundation
Directorate for Technology, Innovation
and Partnerships

Project Title

Delta Bravo Artificial Intelligence, Inc

Awardee

Aquaspec

Phase 2 Award/Contract #

49100425C0010

Award Contract Type

R&D

Award Date

June 6, 2025

Principal Investigator

Rick Oppedisano,
ricko@deltabravo.ai

Co-Principal Investigators

Brett J. Butz

NSF Funding Directorate

Directorate for Technology, Innovation
and Partnerships

NSF Program Director

Richard Farnsworth
Convergence Accelerator:
Future Water Systems Track
Directorate for Technology, Innovation
and Partnerships
U.S. National Science Foundation
rfarnsw@nsf.gov

PROJECT ABSTRACT

In the U.S., more than 40,000 small and rural water systems face mounting challenges from aging infrastructure, staffing shortages, water quality degradation and increased regulatory pressure. Many of these systems lack the tools to detect issues early, retain institutional knowledge or ensure consistent compliance. The integrated team behind Aquaspec delivers a cutting-edge, artificial intelligence-powered decision support platform designed specifically for water and wastewater systems.

Aquaspec combines predictive analytics, machine learning and a custom-trained large language model (LLM) to help operators improve water quality, reduce compliance violations and combat non-revenue water loss without requiring expensive infrastructure upgrades. Aquaspec's development is led by Delta Bravo AI, in collaboration with the South Carolina Department of Environmental Services, and several public utilities and academic experts.

In Phase 2, the Aquaspec team will expand deployment to communities across South Carolina and the Midwest, working directly with operators to refine system recommendations and optimize real-world impact. The team will also enhance Aquaspec's LLM to tailor training, standard operating procedure guidance and operational support to individual operator skill levels and local system needs. Scenario-based simulations built from local datasets will help accelerate onboarding and certification pathways, addressing workforce shortages and knowledge gaps. The funded team will finalize a scalable go-to-market plan and deepen partnerships with state agencies, water authorities and training institutions.

Aquaspec strengthens water system resilience by giving operators and leadership teams predictive visibility, faster decision-making and operational continuity. Real-time data analysis empowers these systems to stay ahead of equipment failures, contamination risks and regulatory demands. The platform equips under-resourced communities with advanced digital tools to deliver safe, clean water, while building local workforce capacity for the future of infrastructure management.