



## THE WATER-COOLED DATA CENTER FINALLY ARRIVES

Project:	Nautilus Data Technologies Floating Water-Cooled Data Center
Location:	Stockton, California
Requirement:	Flexible leak detection system for unique data center design
Results:	PermAlert® PAL-AT liquid leak detection system installed for entire pump station
Completion Date:	April 2021

### OVERVIEW

Our client, Nautilus Data Technologies, a leading company in building high-performance, sustainable data centers, commissioned its first floating water-cooled data center in April 2021 to meet new high-performance computing (HPC) requirements. Nautilus data centers use its patented TRUE™ (Total Resource Usage Effectiveness) technologies to cool computer systems using recirculated water from the San Joaquin River. The data center operates at the highest level of energy efficiency, with no water consumption, no refrigerants, no water treatment chemicals, no wastewater, and no harm to wildlife. But building a data center on the water also presents engineering challenges not encountered by its land-based predecessors.

### CLIENT REQUIREMENTS

The 10,000 square foot floating data center requires a liquid leak detection system with an overall design that thoroughly considers the risk of any leak, including from freshwater. A major challenge was finding the right company who understood a conventional evaporative type cooling system using freshwater instead of processed water from the municipality to monitor leaks that may occur, even on the hull of this barge. Hassle-free maintenance of the system was a must when considering operating cost and lights out operation. Nautilus also needed a system that would be reliable long-term without generating false alarms in a dusty environment.

## THE PERMALERT SOLUTION

Considering the unique design of a data center at the shoreline, while also located in a potentially dusty environment, PermAlert proposed the PAL-AT series leak detection system.



**AGW-Gold Sensing Cable**

The proposed system consisted of the AGW-Gold cable, which is ideal for a harsh environment and requires minimal maintenance due to its rugged coaxial construction. And the PAL-AT series panel was selected due to its flexibility and scalability to monitor multiple locations simultaneously within the facility. The system can also monitor different liquids such as fuel, corrosive chemicals, and water without needing a specialized sensor for detecting different liquids. The control panel also features unique capabilities in detecting multiple and growing leaks along the sensing cable while integrated into the backend BMS system.



**PAL-AT Control Panel**

**PermAlert Leak Detection**  
Intelligent · Accurate · Reliable



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