

A Data-Driven Approach to Proactive Maintenance

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Why do we call these systems smart?

Remote Utility Metering



Pool Automation



Smart Appliances



Smart Irrigation



Smart Thermostats





**Why Not
Smart Septic?**



Remote Process Monitoring

Automated, 24/7, offsite monitoring of the septic system's real-time status and performance data.

The Proactive Paradigm

Can system deterioration be cost effectively detected and remediated prior to traditional alarms or impact to the community and environment?

Case Study:

Automotive Transformation to Address Industry Challenges

- Increased machine complexity
- Additional regulation (emissions, safety)
- Availability of (experienced) technicians



How Automotive Used To Do It

- Proximity to vehicle & driver communication
- Heavily reliant on the skill & experience of the mechanic
- Modest system complexity



The modern automotive industry

- High Product Complexity
- Self Diagnostic
- Historical Logging
- Enhances the less experienced technician

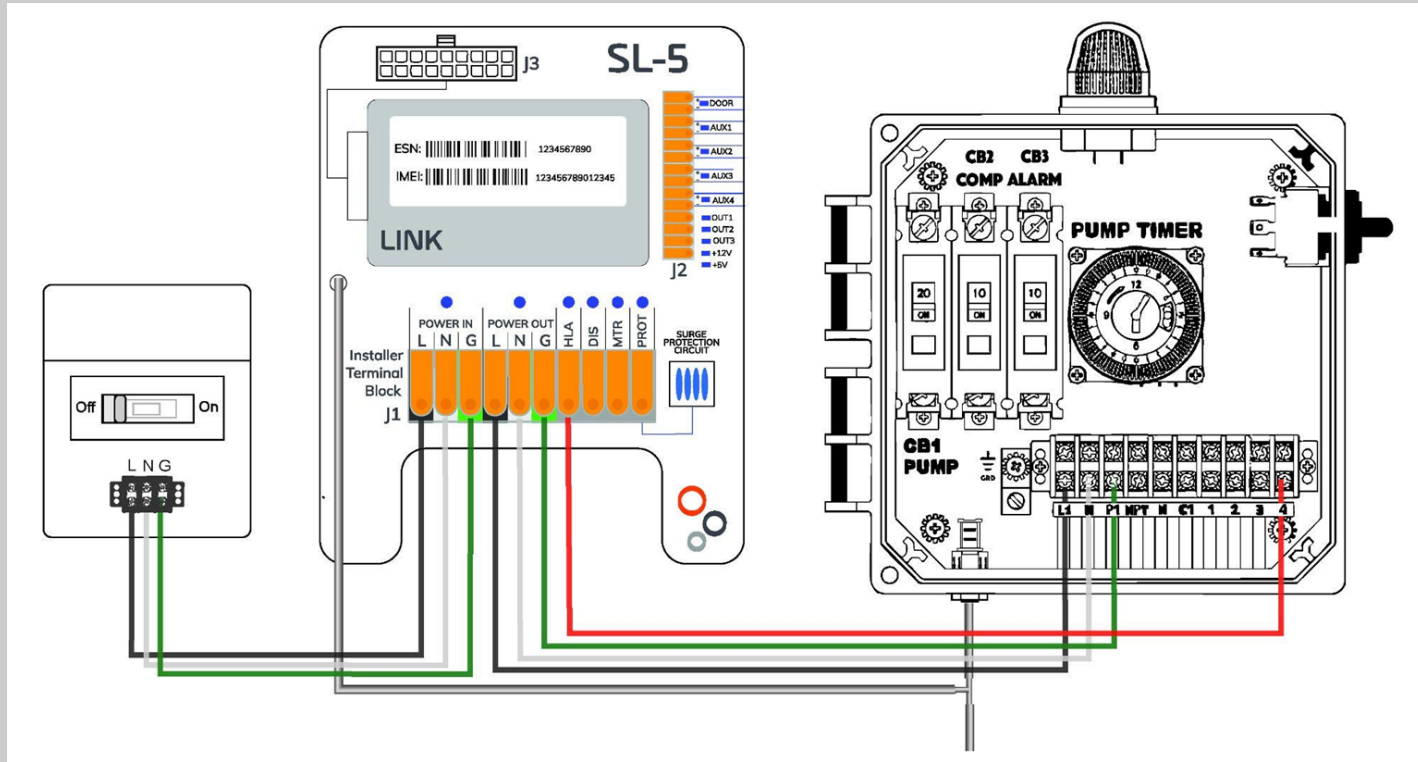


Proactive
vs
Reactive



We Need the “Check Engine Light” for Septic Systems

Wiring Diagram for Typical Existing System Control Panel



Disconnect

Monitoring

Control Panel

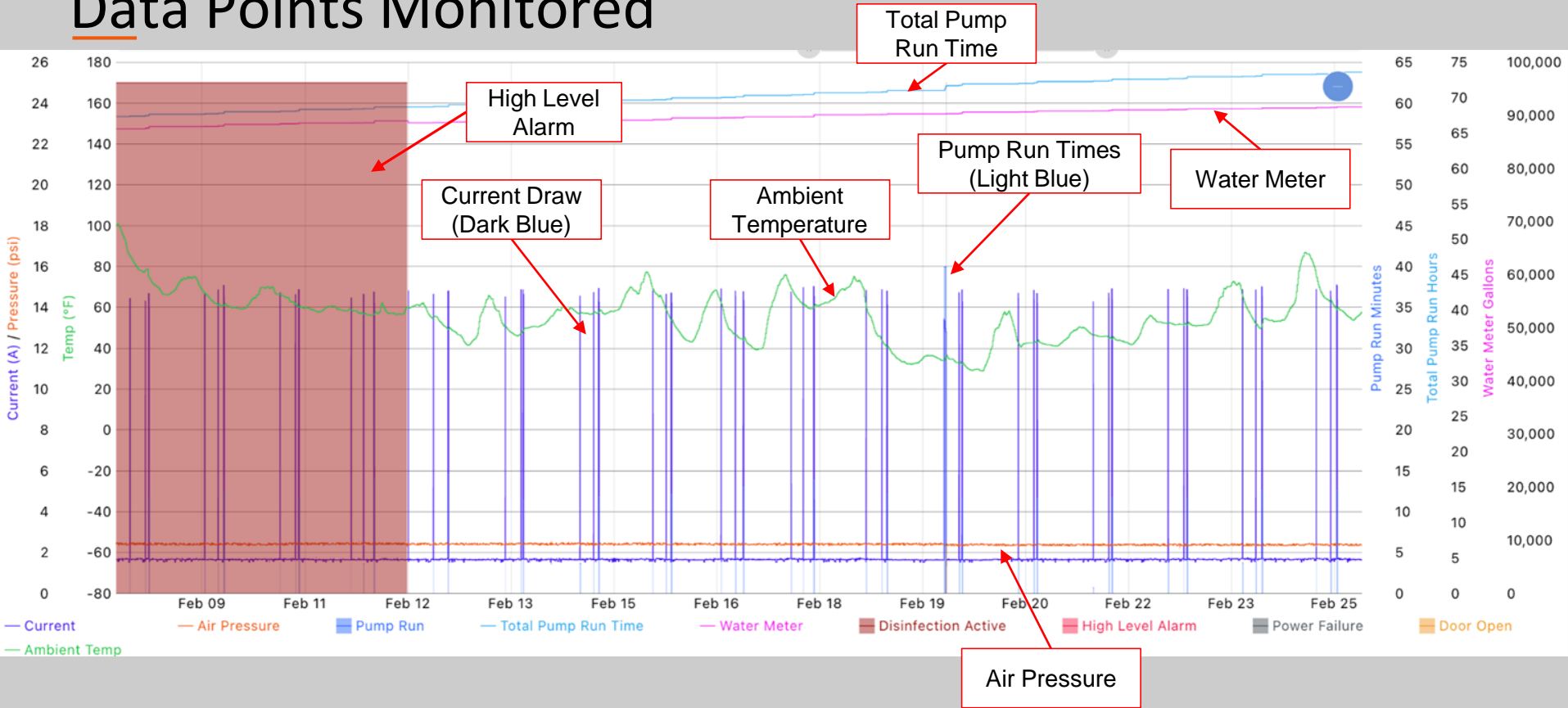
Installation Video



Monitoring in the Field & Capturing System History



Data Points Monitored

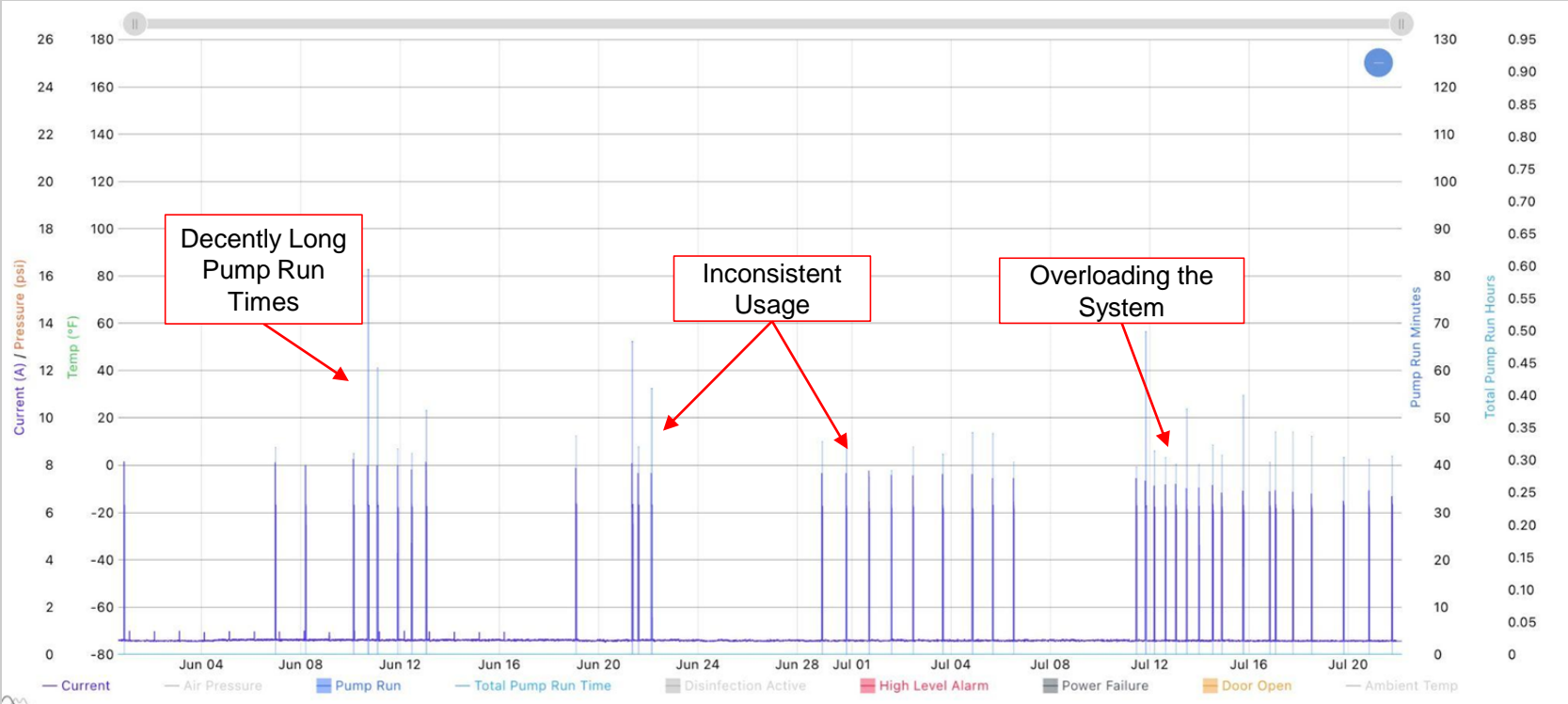


Remote Process Monitoring

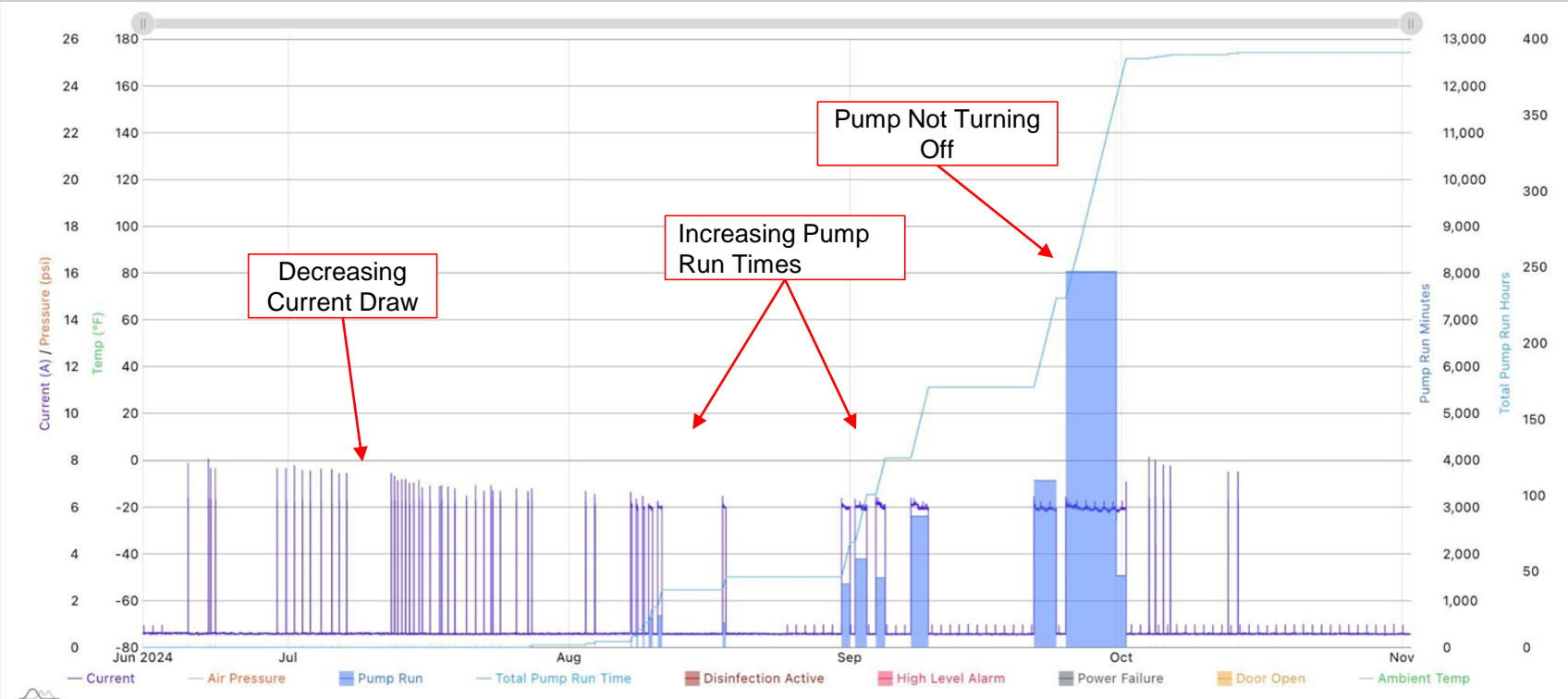
Issues Detected

- Water Leaks
- Clogged Intake Filters
- Long Pump Run
- Aeration Anomalies (High/Low Air Pressure)
- Diffuser Problems
- Surface Blowouts
- Power Failures
- System Overloading
- Surface Water Leakage

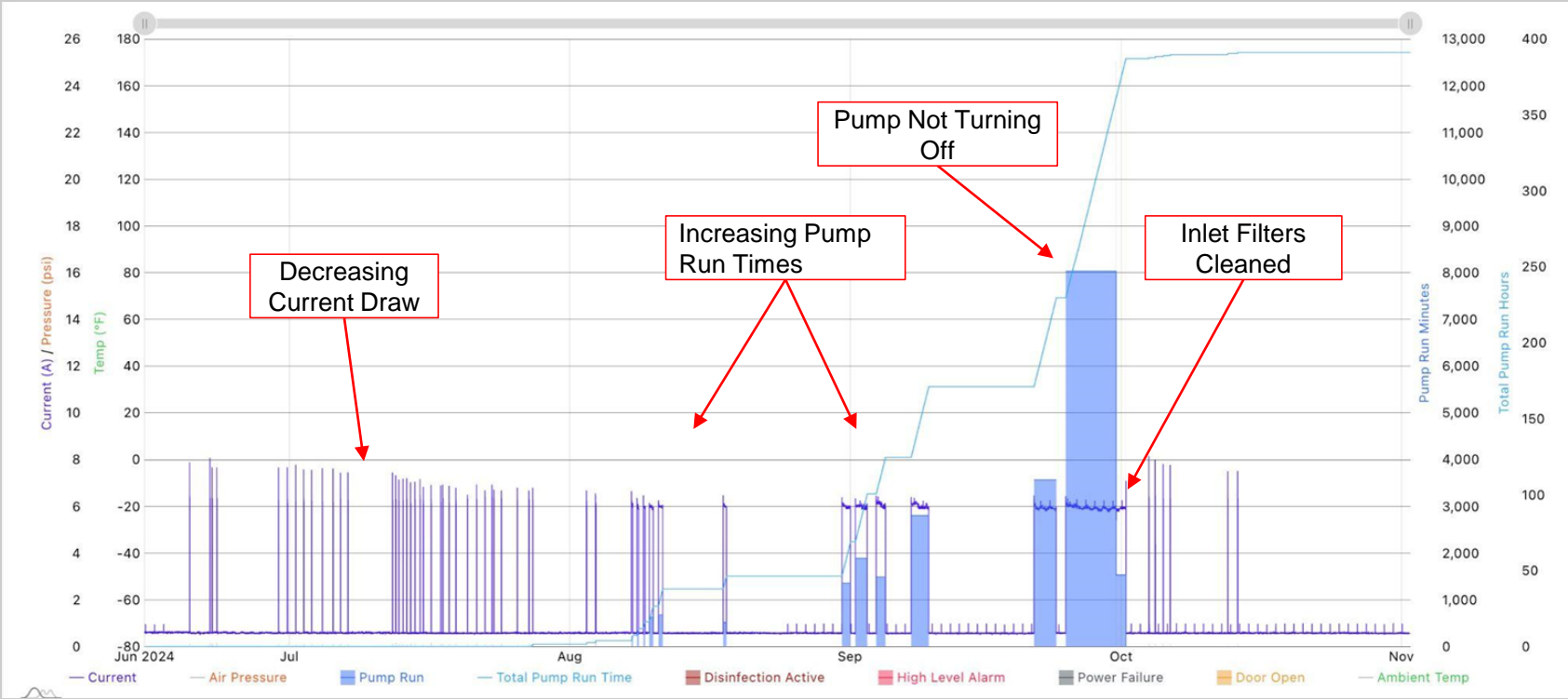
Airbnb Property



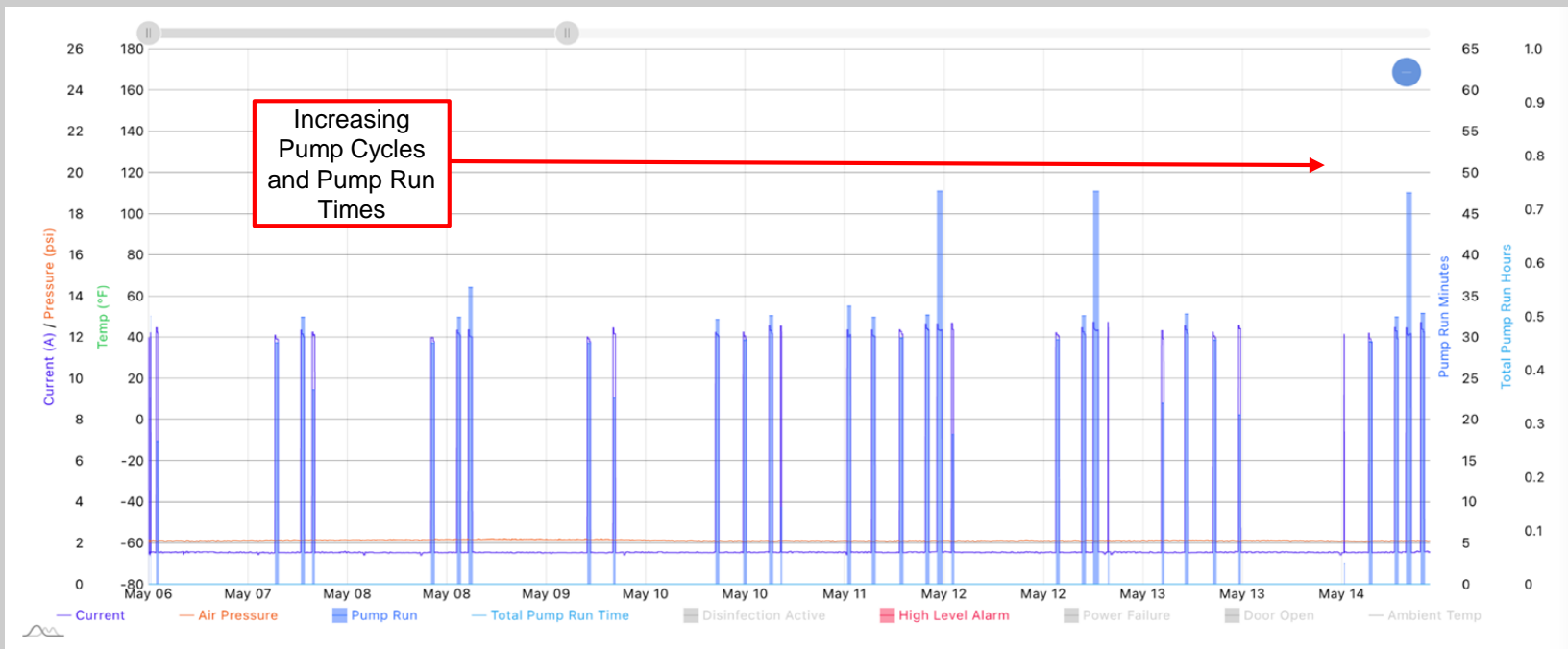
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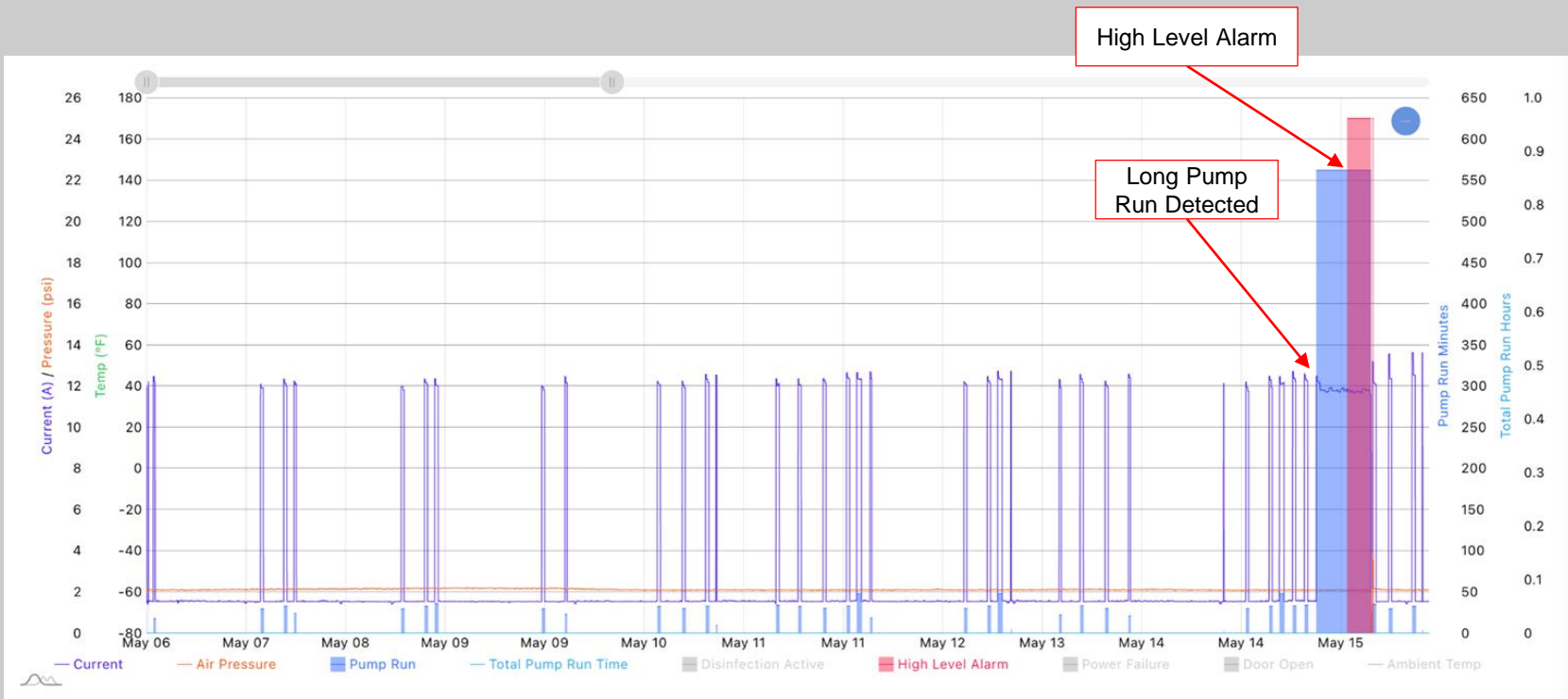
Airbnb Property



Drip System



Drip System



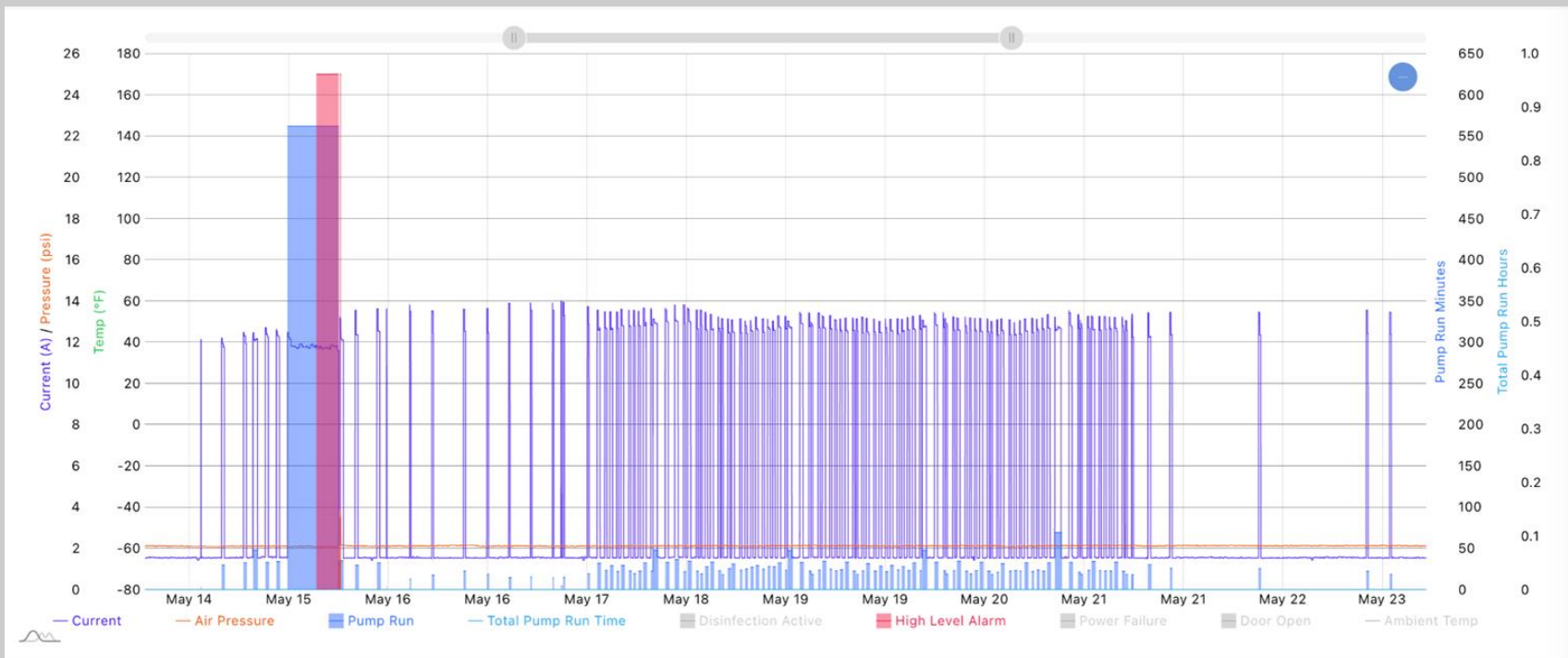
Drip System



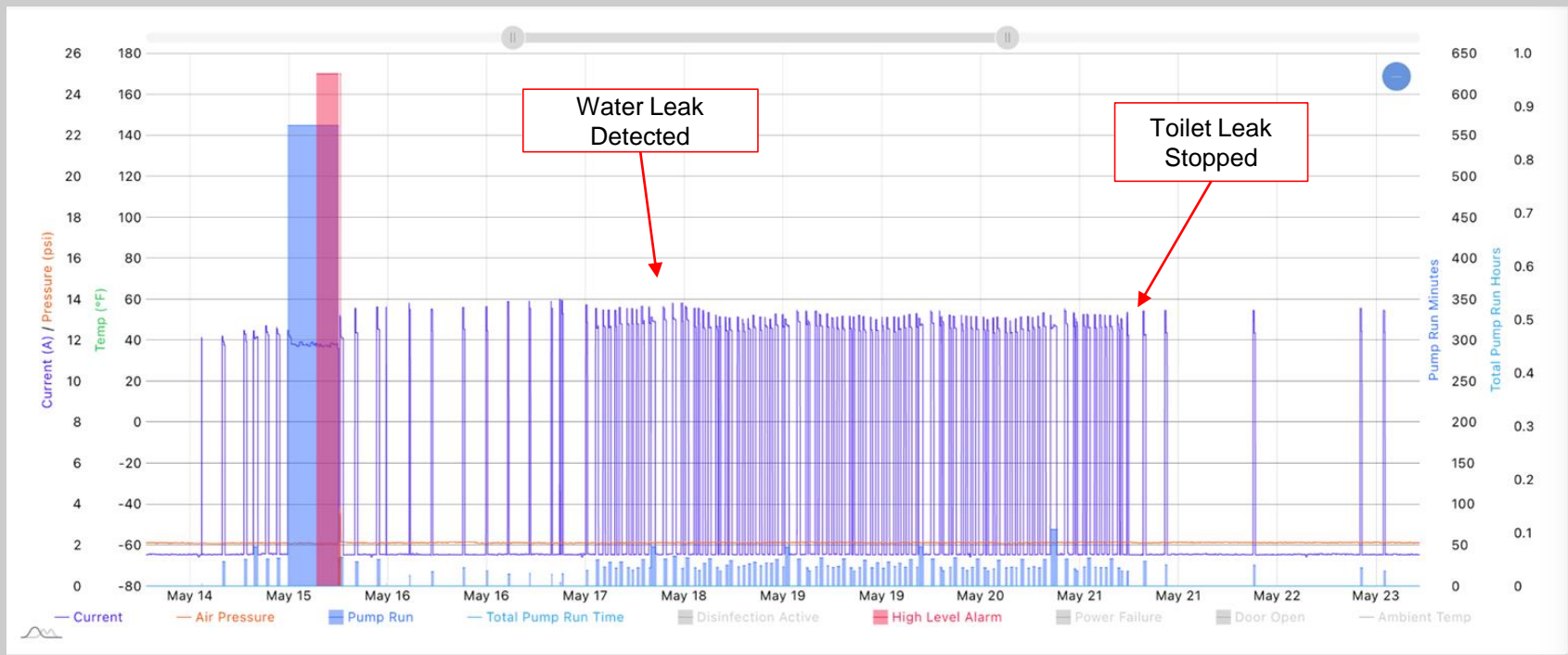
Drip System



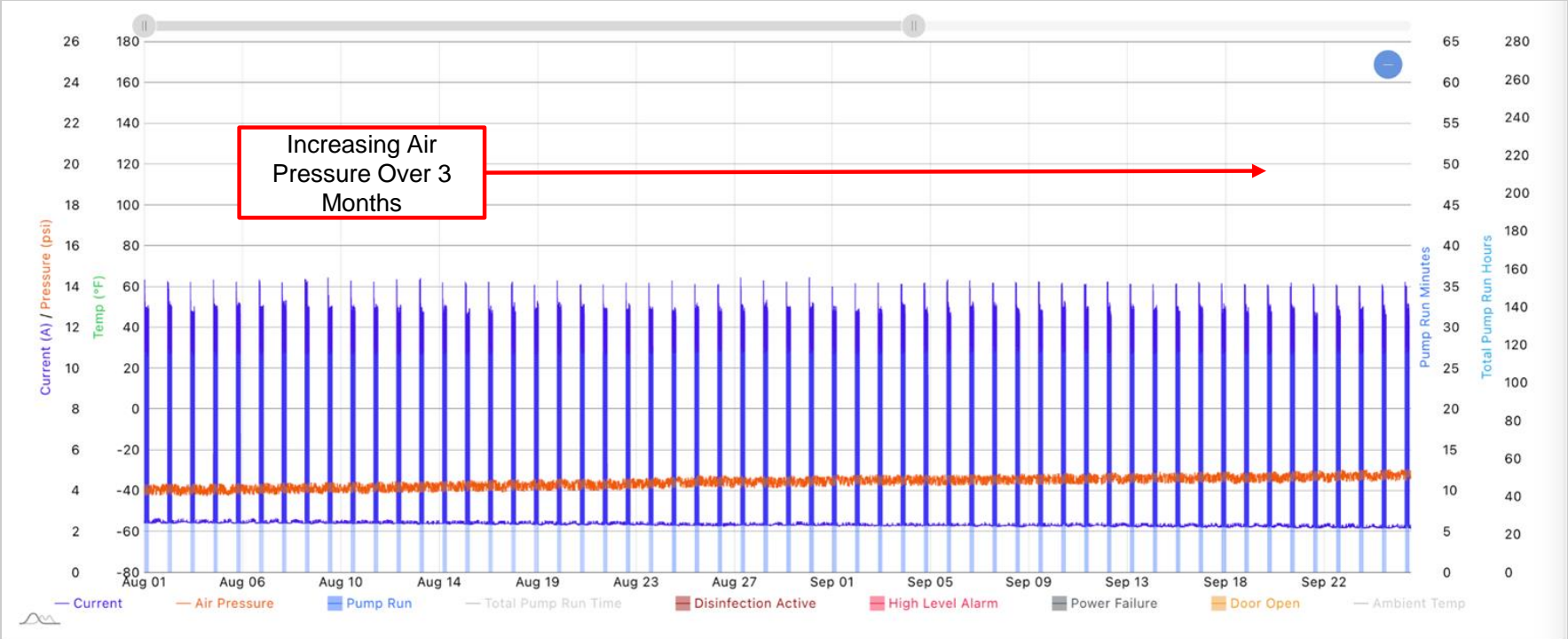
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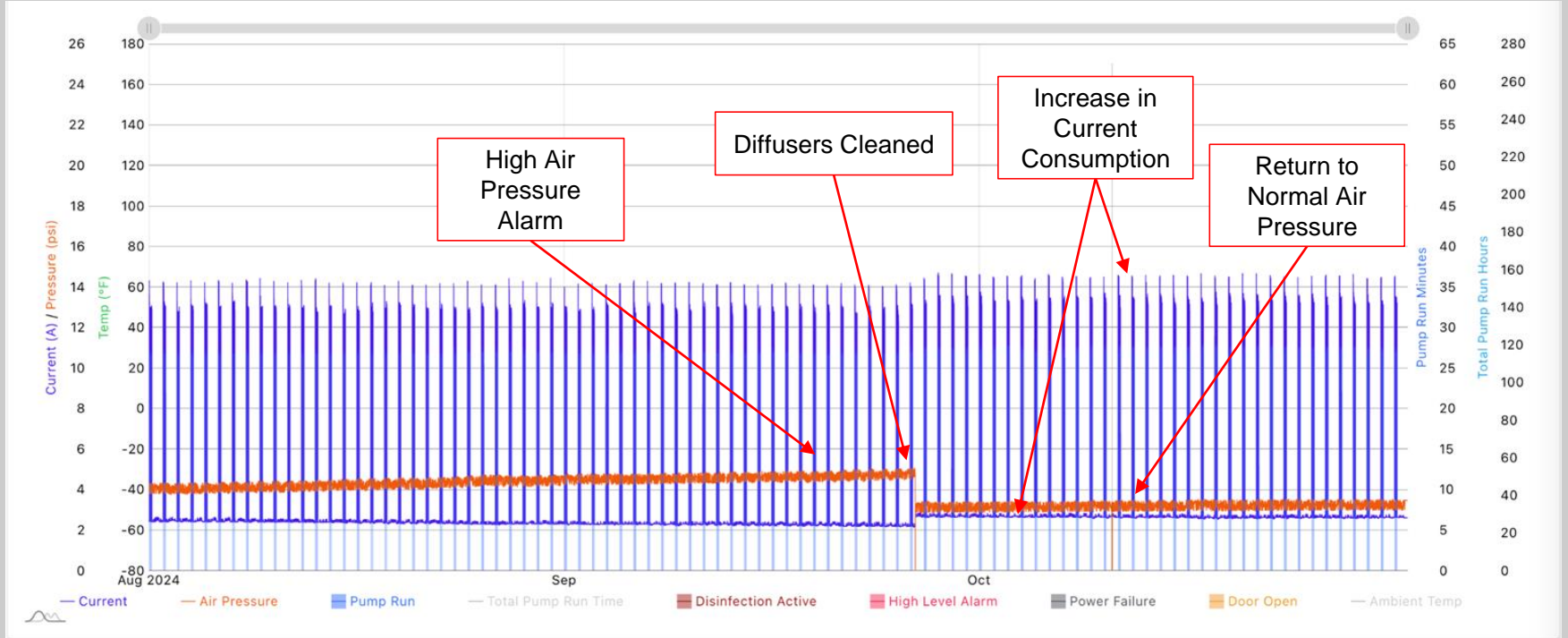
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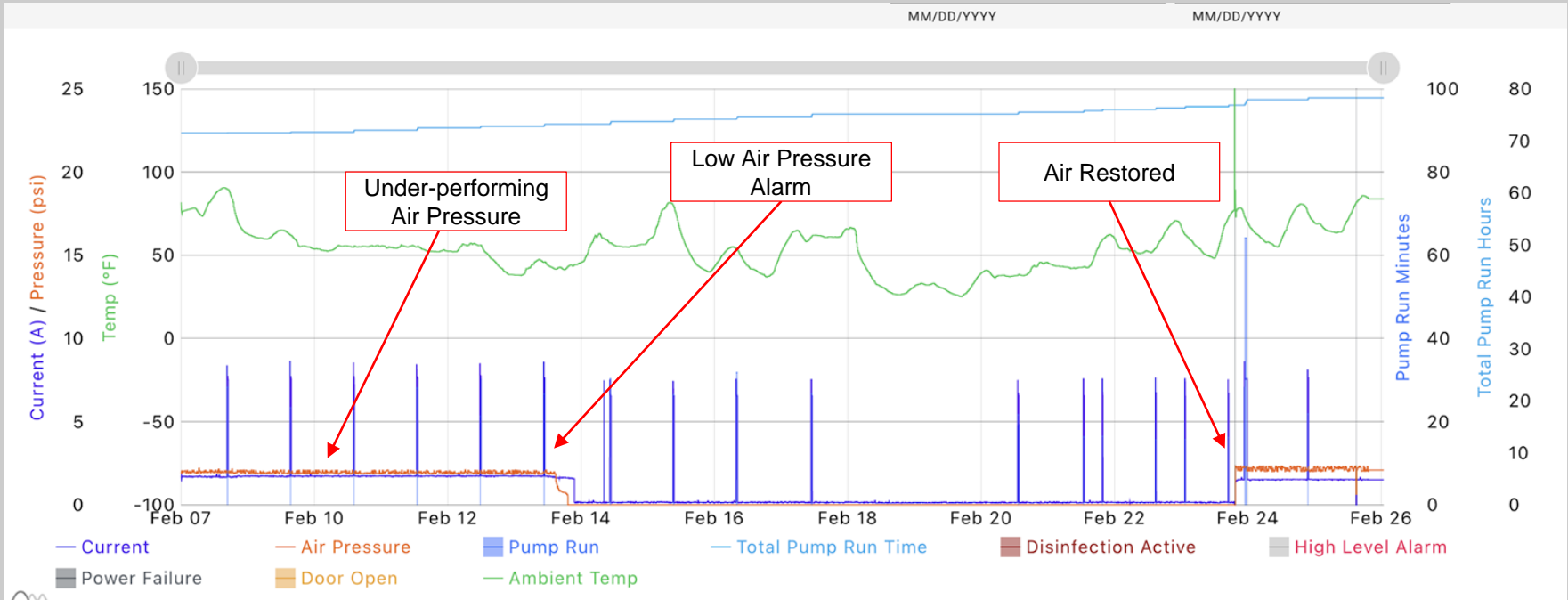
Air Pressure



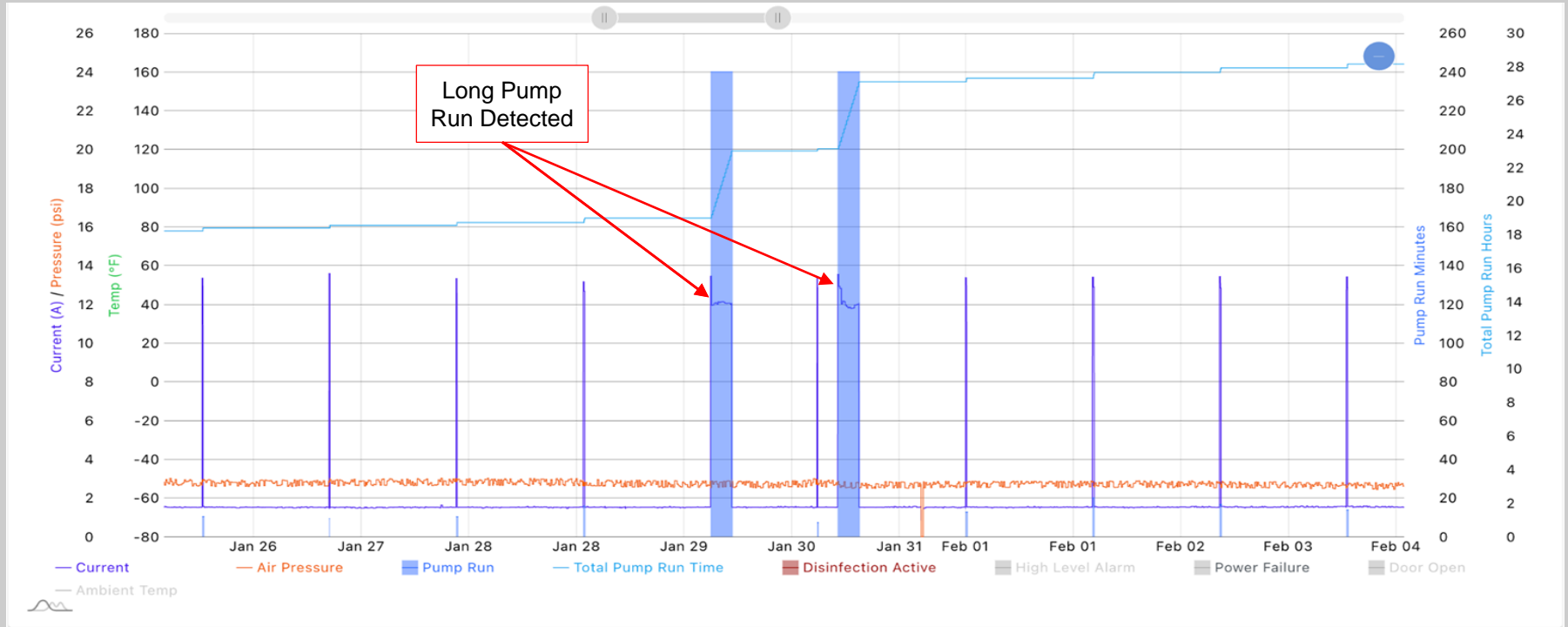
Diffuser Service



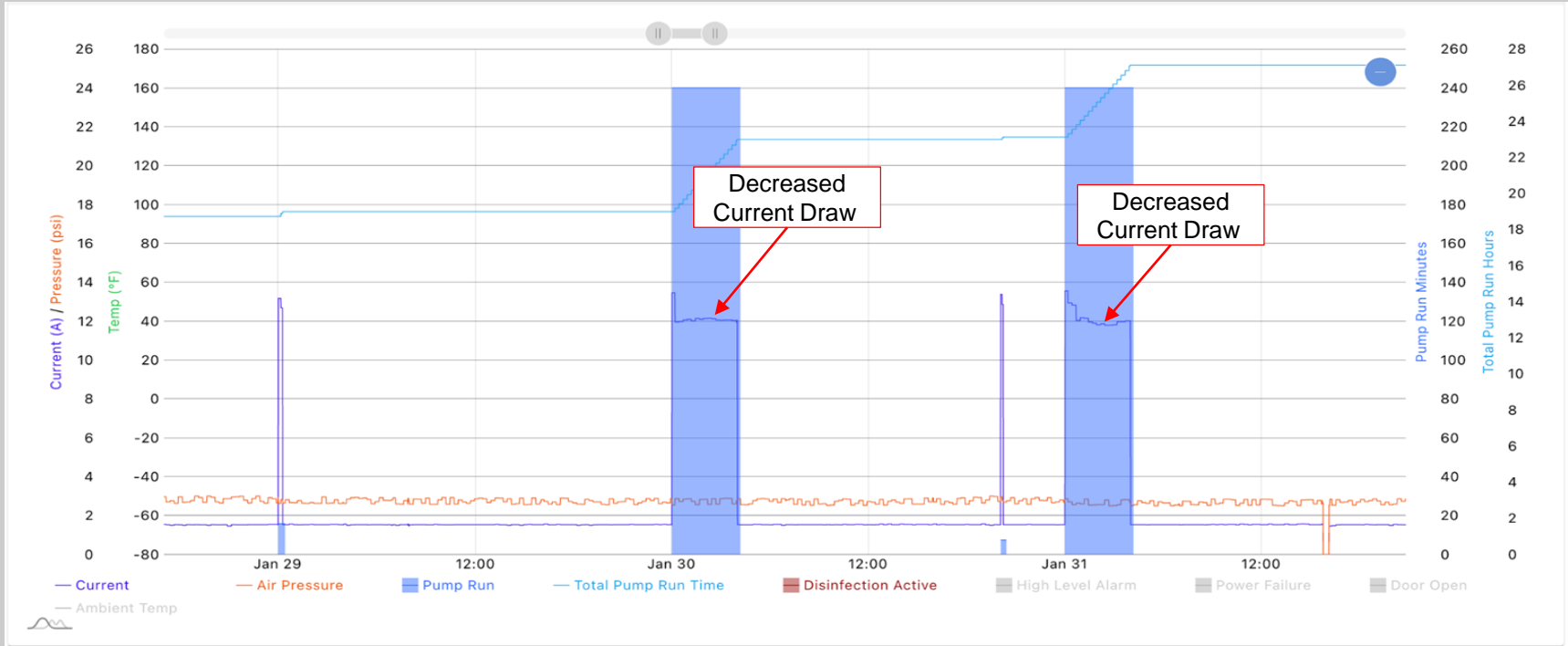
Aerator Repair



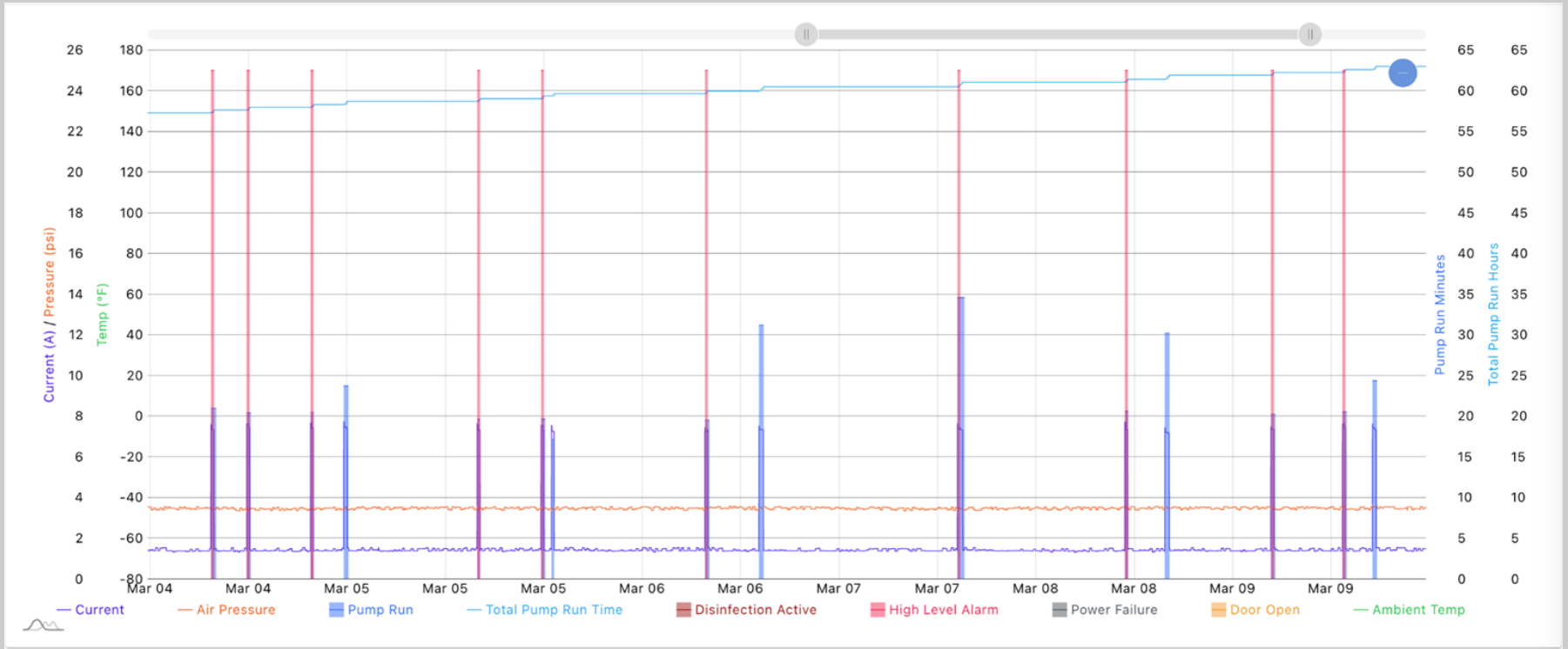
Long Pump Run



Float Malfunction



Groundwater Infiltration



Conclusion

Real-time septic monitoring detects issues early, enabling timely and cost-effective repairs.

Summary

Shifting to **proactive maintenance** in the septic industry can boost customer satisfaction while helping address rising system complexity, stricter regulations, and technician shortages.