# Axiom Cloud Customer Story:
## Back-to-Back Refrigerant Leaks Each Resolved within 1 Day

## OVERVIEW

On a 95° day in July 2023, a Sprouts Farmers Market near Sacramento, CA began leaking 407F refrigerant from Rack 1/2. No receiver level alarms were triggered, and the store's leak detector was out of calibration, so it was being ignored.

Axiom's AI-enabled "Early Leak Detection" module* confirmed the leak <2 days after it started. Sprouts used Axiom's anomaly notification to open an urgent work order, and a technician repaired a leaky compressor fitting at the site a few hours later. Sprouts and Axiom worked together to detect the leak early and respond quickly, avoiding a potential storewide cooling outage and ~200 lbs of leaked gas.

However, the leak was only temporarily resolved by the first service call. Seven days after the initial repair, Axiom's AI identified another significant leak on the same rack. The Sprouts service manager copied Axiom's anomaly notification into an urgent work order, and a technician went onsite later that day. The technician tightened up the fittings on the rack and resolved the leak. By addressing the leak when the receiver was at ~30%, Sprouts estimates that it avoided another stressful storewide cooling outage and ~100 lbs of leaked gas.

**Today, Axiom continuously monitors hundreds of sites for refrigerant leaks using AI, whether or not they have PPM refrigerant sensors or receiver level sensors.** Grocers like Sprouts use Axiom's "Early Leak Detection" module to lower their store's leak rates, slash their Scope 1 carbon emissions, and eliminate required quarterly manual leak checks.

> "Without Axiom's support, we would have lost hundreds of pounds of refrigerant and experienced a critical cooling outage within 24 hours. And, it happened twice in a week!"
>
> -Sprouts Service Manager

## RESULT

Axiom helped Sprouts avoid a store-wide refrigeration failure by addressing a leak that was otherwise undetected. The store also saved ~300 lbs of refrigerant (550,000 lbs CO2e, $9,600 in refrigerant costs alone) by resolving the leak early.

### Customer
Sprouts Farmer's Market
380 Stores
23 States
35,000 Employees

### Highlighted Module

Early Leak Detection (patent pending)

*The California Air Resources Board (CARB) lists Axiom Cloud as an Automatic Leak Detection (ALD) system.
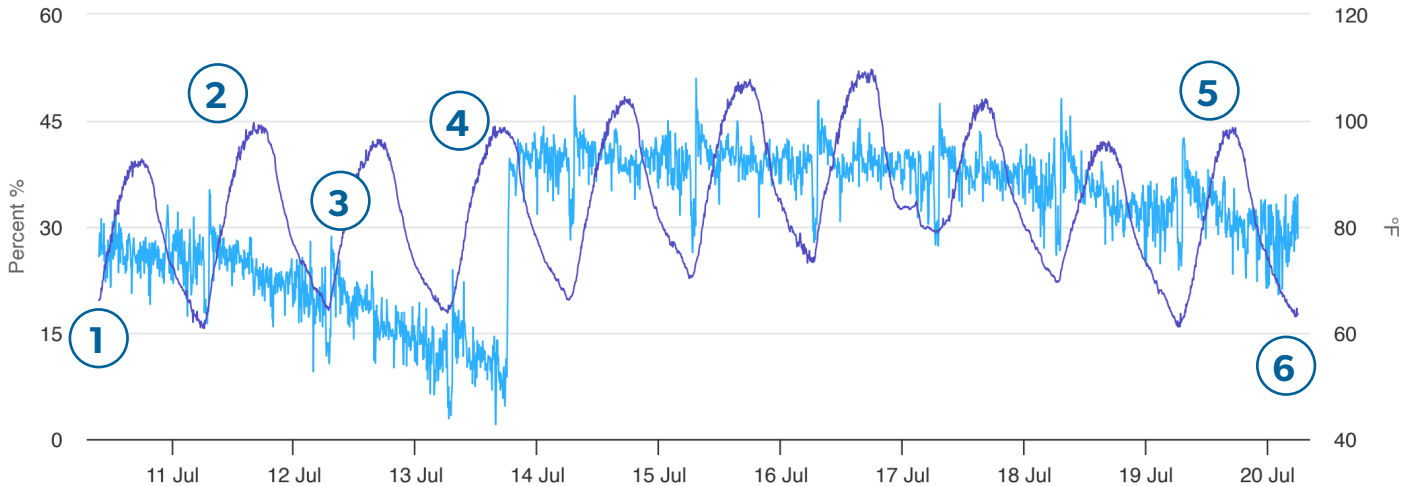
### Refrigeration System Architecture

Emerson E2 Controller
Split rack, 407F refrigerant

## OUTCOMES

- Avoided 2 potential emergency cooling outages
- Saved ~300 lbs of refrigerant (550,000 lbs CO2e)
- Saved $9,600 in refrigerant costs alone
- Avoided $2,500 unnecessary sensor replacement (parts + labor)

# USING AI TO MAKE HIDDEN LEAKS ACTIONABLE



**1** **July 10, 2023 at 4:22pm** Axiom's AI-driven models detected the leak using 8 system-level indicators to estimate relative changes in refrigerant levels (note: receiver level sensor is NOT required but is helpful to visualize)

**2** **July 12, 2023 at 4:35pm** After Axiom's models reached 98.5% confidence in the leak, and a refrigeration specialist confirmed the leak, Axiom sent a "high urgency" anomaly notification to the regional service manager via email (see below). It included a receiver level trend to help visually show the leak (but the receiver level sensor was not used to detect the leak).

**3** **July 13, 2023 at 8:15am** The Sprouts service manager opened a high-urgency work order by copying/ pasting Axiom's anomaly notification directly into the CMMS (to explain the issue and help the technician be more efficient onsite).

**4** **July 13, 2023 at ~6:00pm**  A service technician went onsite to repair the leak (a faulty compressor fitting) and refilled the system with 50 lbs of gas (to 38%). **The Sprouts service manager estimates that the rack would have lost ~200 lbs of additional gas and experienced a stressful "rack fail" within 24 hours if Axiom hadn't caught the leak.**

**5** **July 20, 2023 at 7:51am** Axiom's AI-driven models detected another leak on the same system, so another "high urgency" anomaly notification was sent. The Sprouts service manager opened a high-urgency work order by copying/pasting Axiom's anomaly directly into the CMMS.

**6** **July 20, 2023 at ~4:00pm** A service technician successfully repaired the leak and identified a faulty leak detector onsite. No gas refill was necessary. **The Sprouts service manager estimates that the rack would have lost another ~100 lbs of gas and experienced a stressful "rack fail" within ~5 days if Axiom hadn't caught the leak.**

**August 1, 2023 at 5:27pm** Axiom used data to validate that the root cause of the anomaly was solved and marked it as resolved!

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Axiom Cloud uses AI and automation to transform how the world's cooling systems are powered, operated, and maintained. To learn more about our software modules for refrigeration, send us an email or visit our website.

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