Pilot Readout (Sample)

Example findings, triggers, and recommended actions

Evidence, not impressions.

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1. Executive Summary

Outcome

We found canopy microclimate pockets that wall sensors did not represent, with repeatable risk signatures during specific cycle windows.

So what

This readout turns that into: (1) a pocket/zone inventory, (2) specific triggers that create urgency, (3) recommended interventions ranked by expected impact, and (4) a verification plan that produces before/after evidence.

Pass / Fail in one sentence

Pass means the agreed acceptance tests are satisfied *at the canopy* (not just on a wall sensor) and the before/after evidence shows the pocket signatures no longer appear under the same operating conditions.

2. Pilot Context

2.1 Why this pilot exists

Facilities often operate with a “single truth” from wall sensors and averages. The problem is not that the average is wrong; it’s that **the average is non-actionable when pockets exist**. Pockets create localized risk (mold, stress, yield loss) while dashboards stay green.

2.2 Scope

- Site / room(s): *[Room A, Flower 1, Veg 2, etc.]*

- Duration observed: *[e.g., 14 days baseline + 1 verification pass]*
- Cycles observed: *[lights, irrigation, CO_2, dehu cycles, HVAC modes]*
- Sensors / rigs: *[portable mapping rig, reference units, logger versions]*

2.3 What this readout is (and isn't)

- **Is:** a decision artifact you can forward internally, containing measurements, triggers, recommended actions, and pass/fail criteria.
- **Isn't:** a theory paper, a marketing deck, or a substitute for commissioning gates.

3. Measurement Method (Evidence Model)

3.1 What we measured

Signal	Purpose
Relative Humidity (RH)	Pocket detection, mold-risk signatures, dehumidification performance validation
Temperature	VPD calculation, heat stratification, HVAC distribution
VPD (derived)	Plant stress risk; identifies "quiet failure" zones
Time alignment / co-timing	Ensures comparisons are valid before subtraction/thresholding

3.2 How we reduced interpretation risk

- **Same-clock rule:** we only compare streams after verifying they are on the same clock (or correcting them).
- **Comparable-condition comparisons:** before/after evidence is collected under comparable operating modes (e.g., same lights state, similar irrigation window).
- **Spatial primacy:** canopy-height mapping is treated as primary; wall sensors are supporting context.

3.3 Data windows

Window	Notes
Baseline	*[Start–End]* (normal operations; pocket inventory)
Intervention 1	*[Change + timestamp]* (what changed; expected effect)
Verification	*[Start–End]* (replicate conditions; generate evidence)

4. Key Findings (Sample)

4.1 Pocket inventory

What we observed

Localized RH and VPD pockets persisted through multiple cycles, with strongest signatures during:

- *[e.g., lights-on ramp + first 30–60 minutes]*
- *[e.g., post-irrigation + dehu recovery]*
- *[e.g., HVAC mode transitions / defrost / setpoint chasing]*

4.2 Pocket table (copy/paste friendly)

Pocket ID	Where	Signature	Risk
P-01	*[NW canopy corner, 1.2–1.6m height]*	*[RH spikes + slow recovery; VPD dip]*	*[mold / late-flower risk]*
P-02	*[Center aisle, under supply diffuser]*	*[temperature stratification; VPD swing]*	*[stress / uneven transpiration]*
P-03	*[Under-canopy near return]*	*[persistently high RH vs wall sensor]*	*[hidden risk pocket]*

Insert maps here

Figure placeholders (recommended):

- Pocket map(s): canopy-height heatmaps (RH / Temp / VPD)
- Delta map(s): pocket minus reference (makes "hidden" visible)
- Cycle overlays: signature vs lights/irrigation/dehu timeline

[Paste figures as PDFs/PNGs using your normal LaTeX workflow.]

5. Triggers (What creates urgency)

5.1 Trigger list (operational)

Trigger	What it looks like	Why it matters
T-01: Slow RH recovery	*Pocket RH remains elevated after dehumidification cycle*	Indicates distribution issue; "average looks fine" failure mode
T-02: Cycle-coupled spikes	*Repeatable spikes aligned with irrigation or lights ramp*	Points to deterministic root cause; high leverage fix
T-03: Stratification	*Canopy vs wall diverges consistently*	Wall sensors cannot be treated as go/no-go truth

6. Recommended Actions (Ranked)

6.1 Intervention shortlist

Rank	Intervention	Expected effect	Effort
1	*[Adjust airflow / add mixing / redirect supply]*	*Reduce pocket persistence; improve recovery time*	*Low–Med*
2	*[Dehumidifier placement / staging / control adjustment]*	*Reduce cycle-coupled spikes; stabilize VPD*	*Med*
3	*[Setpoint strategy by zone]*	*Treat room as zones; stop averaging away localized risk*	*Med–High*

6.2 What we recommend doing first

Sequencing principle
Start with interventions that reduce **pocket persistence** and improve **recovery time** during the trigger windows you actually observe. Then re-run verification under comparable operating conditions. Only after pocket signatures are materially reduced do you tune for optimization.

7. Verification Plan (Before/After Evidence)

7.1 Evidence pattern

Artifact	Evidence
Before map	Baseline pocket map(s) + cycle overlays showing signature
Change log	What changed + timestamp + intended mechanism
After map	Same mapping protocol under comparable conditions
Delta proof	Before/after deltas showing pocket removed or materially reduced

7.2 Verification run checklist

- **Match conditions:** replicate cycle window(s) that produced the pocket signature.
- **Keep protocol fixed:** same route, same heights, same sampling density.
- **Record interventions:** exact changes, locations, settings, and time.
- **Generate deltas:** pocket minus reference, before/after overlays.

8. Acceptance Tests (Commissioning Gates)

Purpose
Acceptance tests define **go-live criteria** so subjective "looks better" judgments do not become the standard.

8.1 Acceptance test table (fill-in)

Test	Pass criteria	How verified
AT-01: Pocket reduction	*[No repeatable pocket signature in window X]*	*Before/after delta maps + overlay plots*
AT-02: Recovery time	*[Pocket RH recovers within Y minutes after dehumidification]*	*Cycle-aligned time series at pocket coordinates*
AT-03: Zone stability	*[Zone-to-zone variance below threshold Z]*	*Spatial variance report + repeatability score*

9. Deliverables (Proof Kit Alignment)

9.1 What you can forward internally

- **Pilot Readout (this document)** — findings, triggers, actions, evidence model.
- **Acceptance Tests Checklist** — commissioning gates + pass/fail criteria.
- **Verification & Evidence Method** — what counts as "fixed."
- **Example Pocket Map** — how pockets appear in real canopy geometry.
- **Assumptions & Variability** — what affects outcomes (geometry, cycles observed, intervention count).

10. Assumptions & Variability (Sample)

- Geometry matters: obstructions, canopy density, aisle layout, diffuser placement.
- Timing matters: cycles observed (lights, irrigation, dehumidification) determine what signatures appear.
- Intervention count matters: single-change verification is cleanest; multiple changes require precise change logs.
- "Wall sensor agreement" is not proof: canopy conditions can diverge while room averages appear stable.

11. Appendix (Optional)

11.1 Glossary

Term	Meaning
Pocket	Localized zone where RH/Temp/VPD deviates in a persistent, repeatable way
Evidence artifact	Documented before/after outputs supporting a go/no-go conclusion
Acceptance test	Commissioning gate with pass/fail criteria for go-live

11.2 Change log

Version	Date	Notes
v1.0.0	January 19, 2026	Initial aligned template (matches checklist styling; watermark + header/footer metadata)

