ENDURA MINING · HEALTH & SAFETY

# SafeStrata

*Let's Talk Safety Foundations (te tūāpapa)*

Re-inventing Safety Foundations to Enable Smarter Risk Decisions During the Transition to Production

Kylie Harris | HSEC Manager | Snowy River Mine, Endura Mining | Reefton, New Zealand

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# Where This Started

*"Everything the standard asked for was in place. Nobody believed what it was telling us."*



## 01

### The System Was Mature

A much larger operation. Audits, task observations and critical control verification, all well embedded and closed out on time.



## 02

### The Data Had Stopped Meaning Anything

Tick and flick to close out a KPI. The completion number went up. Nobody trusted what it said about the job.



## 03

### The Knowledge Was Still There

Workers knew what was actually happening. Nothing we handed them made it safe, or worth their while, to say so.

# The Opportunity: Project to Operating Mine



## 01

### Work Becomes Repetitive

Familiarity breeds complacency. Workers stop seeing hazards they encounter every day.



## 02

### New Workers Integrated

Experienced and inexperienced workers side-by-side. Knowledge gaps are invisible until something goes wrong.



## 03

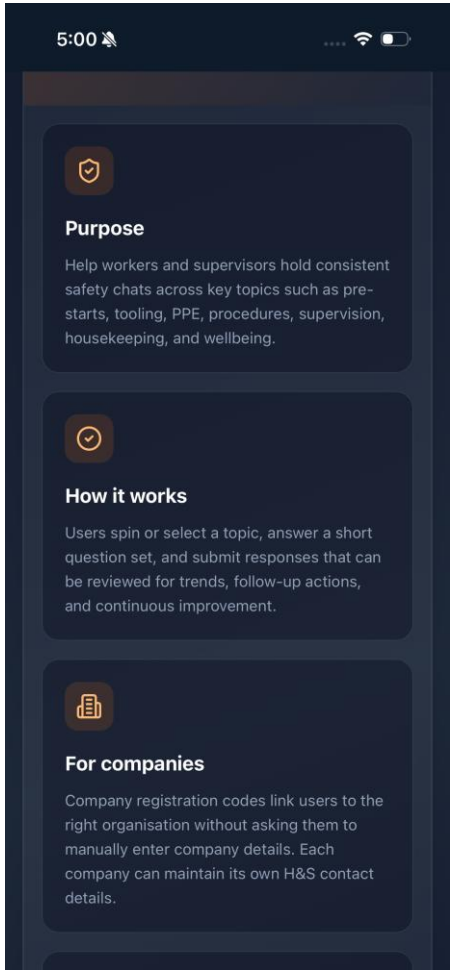
### Production Pressure Increases

The mine needs to perform. Safety conversations can feel like a brake on progress.

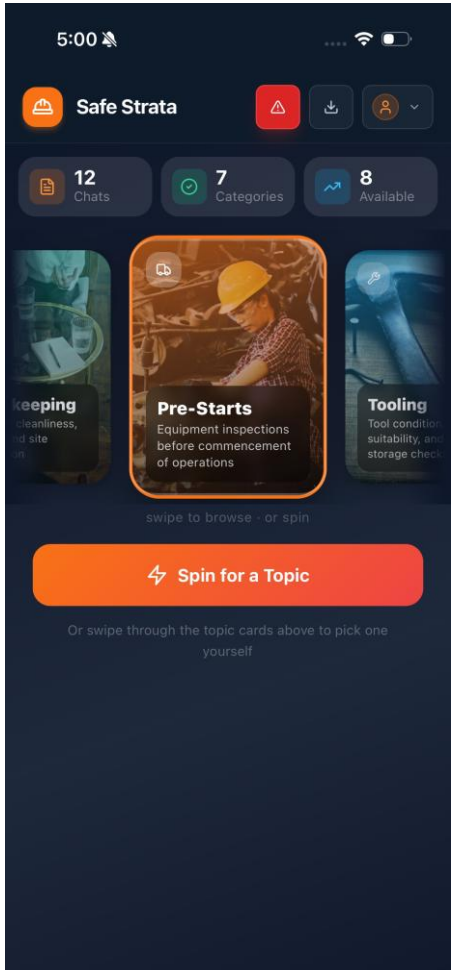
***The risk profile changes here. Starting from a project, we could build the foundation in rather than retrofit it.***

# What It Looks Like in the Hand

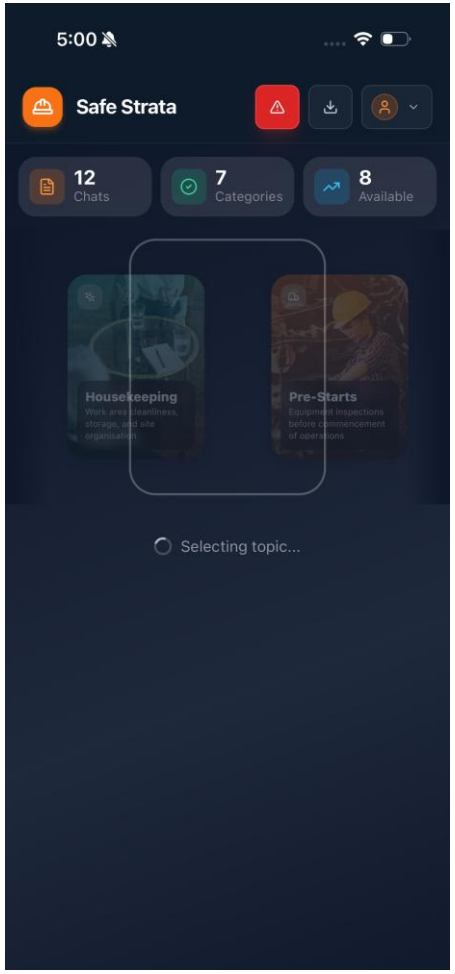
Screens 1 to 3 of 9 · The operator opens the app, and the spin chooses the topic




**Purpose & setup**



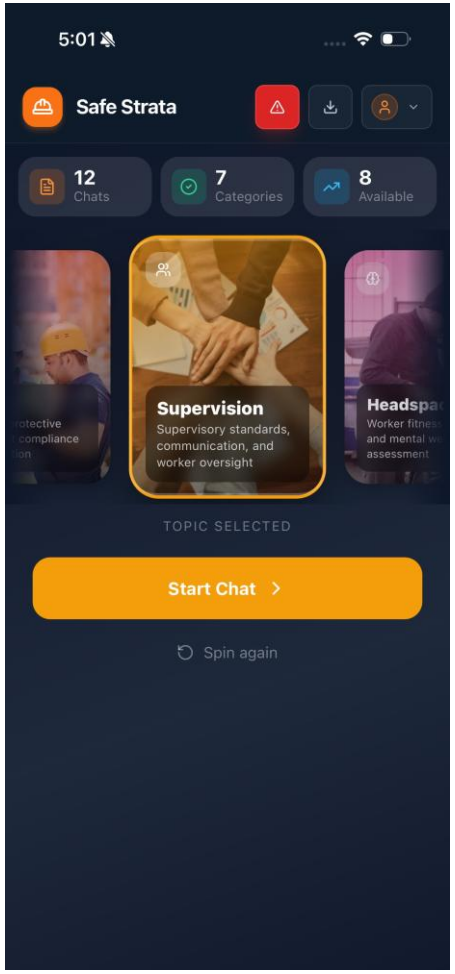

**Spin for a topic**



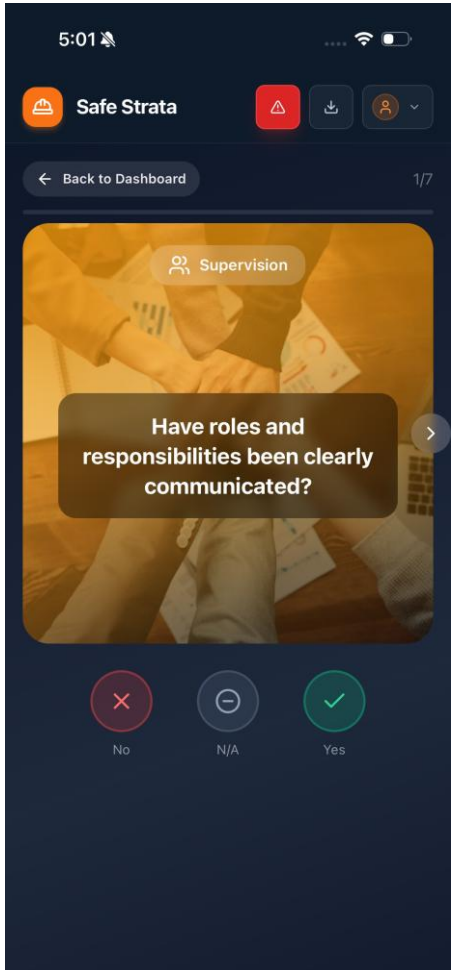

**Selecting a topic**

# In the Hand: The Conversation

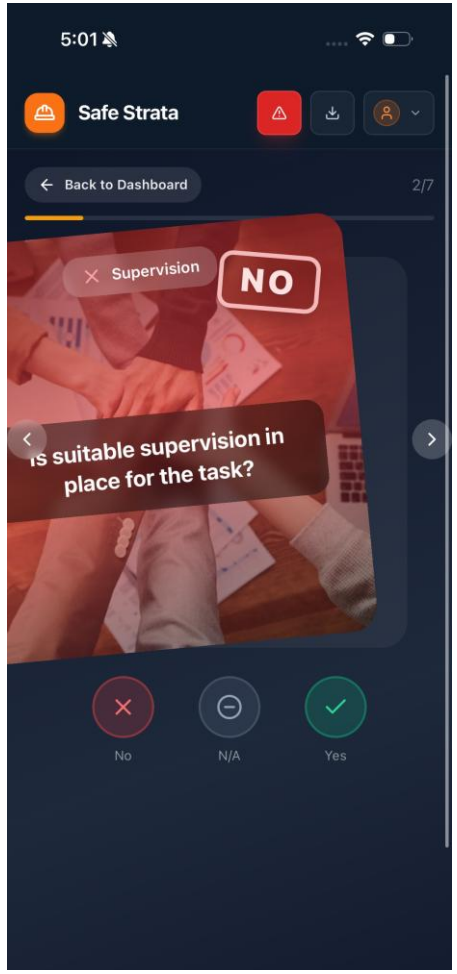
Screens 4 to 6 of 9 · The conversation runs on swipes, so no training is needed




**Start the chat**



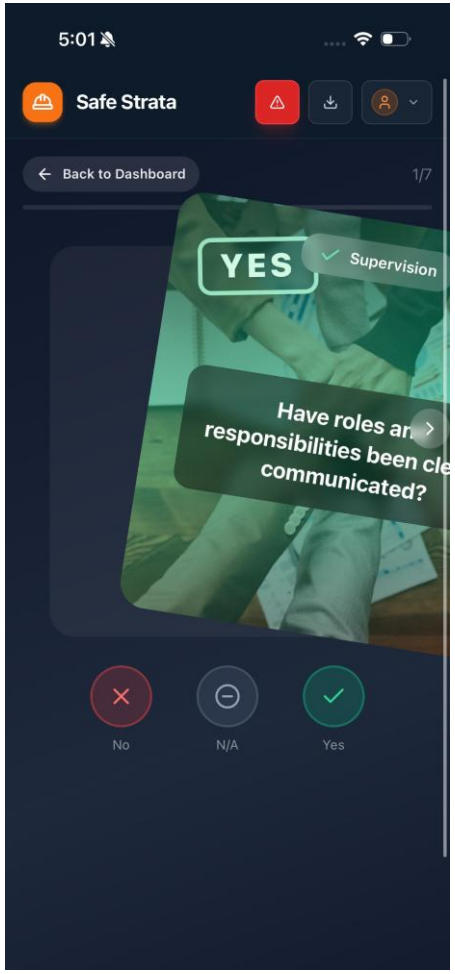

**Answer prompts**



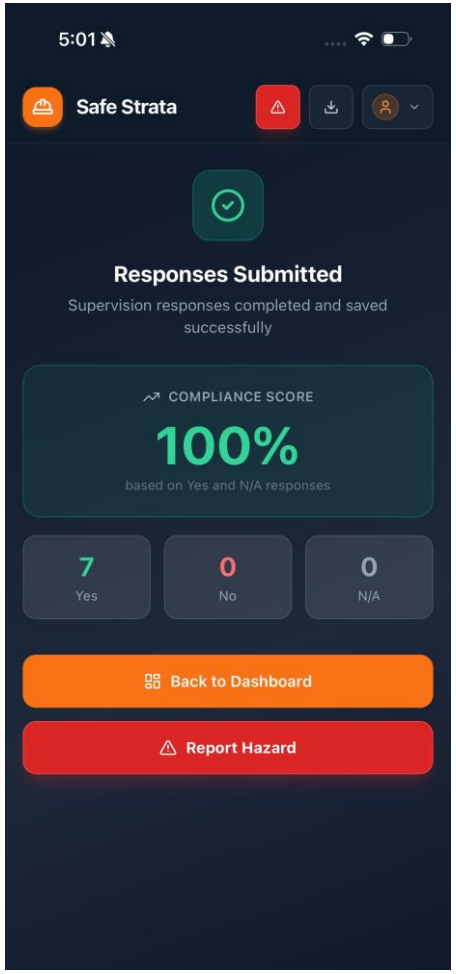

**Swipe left = No**

# In the Hand: Summary and Hazards

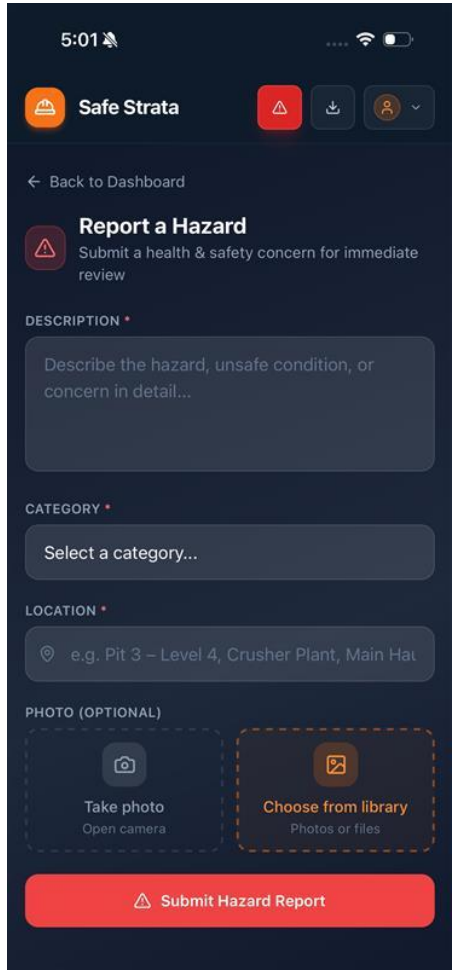
Screens 7 to 9 of 9 · A summary of what was covered, and a hazard raised on the spot




**Swipe right = Yes**




**Summary screen**




**Report a hazard**

# The SafeStrata Approach

**DEEPER LAYERS**

*Emergency response · Leadership · Safety culture*

**NEXT LAYER**

*Site-specific risk · Changing conditions · Frontline decision-making*

**FOUNDATION LAYER**

*Supervision · Housekeeping · Headspace · Pre-starts · Procedures · Take 5 · Tooling · PPE*

*Start at the foundation →*

## How It Works

**01** **Structured chat conversations**

*Not a form. Not an audit. A guided dialogue.*

**02** **No personal worker data collected**

*Removes fear. Workers engage honestly.*

**03** **Actions and photos still raised**

*Practical outcomes without the punitive feel.*

**04** **"Let's fix it together" tone**

*Built for trust, not compliance theatre.*

# What a SafeStrata Conversation Looks Like

## The Conversation

*Good awareness. What would you do differently to make sure that doesn't happen, tell me more about that for this task?*

**Worker to Worker**

## Why This Works

**Open question**

*The worker names the hazard themselves. We are not testing whether they can recite a control, we are finding out what they actually understand.*

**Worker's language**

*No jargon and no procedure numbers. The conversation stays human.*

**Build on the answer**

*The follow-up reinforces their thinking without correcting or criticising it.*

**Worker-initiated action**

*The action comes from the worker, not from a manager directive.*

# Designed So Honesty Costs Nothing

Every design decision removes a reason not to tell you the truth

### Anonymous

No name is attached to any answer. The operator is not weighing what it costs them to say no.

### The operator spins the topic

Nobody has been singled out. A conversation about housekeeping is not an accusation about housekeeping.

### The same questions every time

Answers become comparable across crews, shifts and weeks. That is what turns talk into signal.

### A NO opens the conversation

It is a prompt, not a finding. Nothing is being audited, nobody is being written up, and it is fixed together.

**This is not a softer audit.** An audit asks whether the documented control was in place. This asks what actually happens, from the only people who know, and it is built so that answering honestly carries no cost at all.

# How We Ran It



## 01

### A Very Soft Launch

No announcement, no campaign. Just me and the safety team asking operators if they fancied a chat and a play with the app.



## 02

### We Handed Over the Phone

Spin the tile and see where it lands. Swipe right to agree, swipe left to disagree. No judgement either way.



## 03

### Nothing Was Riding On It

Not a KPI, not a quota, not a number anyone had to hit. No one was ever asked to take part.

***Since March. Enough conversations to start seeing a pattern. It's landing because nothing is riding on the answer.***

# It Does Not Replace Them. It Tests Them.

Three ways to ask an operator what is really happening, and what each one actually returns

| | The chat we have always had | Audit · Observation · Critical control verification | SafeStrata |
|---|---|---|---|
| **What it measures** | Work as done | Work as documented | **Work as done** |
| **What it costs to answer honestly** | You are talking to your supervisor | Your name is on the record | **Nothing. The operator is anonymous** |
| **Who chooses the topic** | Whoever started the conversation | The person holding the checklist | **The operator, or the spin** |
| **Does it leave something countable** | No | Yes | **Yes** |
| **Can it see beneath the controls** | Sometimes, then it is gone | No. It verifies the control | **Yes, that is the whole design** |

**A mature site can report *full completion* on every audit and observation on the plan.** That tells you the system ran. It does not tell you whether anything landed at the face. This is not a rival instrument; it is the one that tells you whether the others still return anything true.

# Turning Safety Data Into Action

*Foundations data produces the leading signal. Hazard and incident data confirm it and show where to act.*

**01**

**Foundations Data**

**02**

**Hazard Data**

**03**

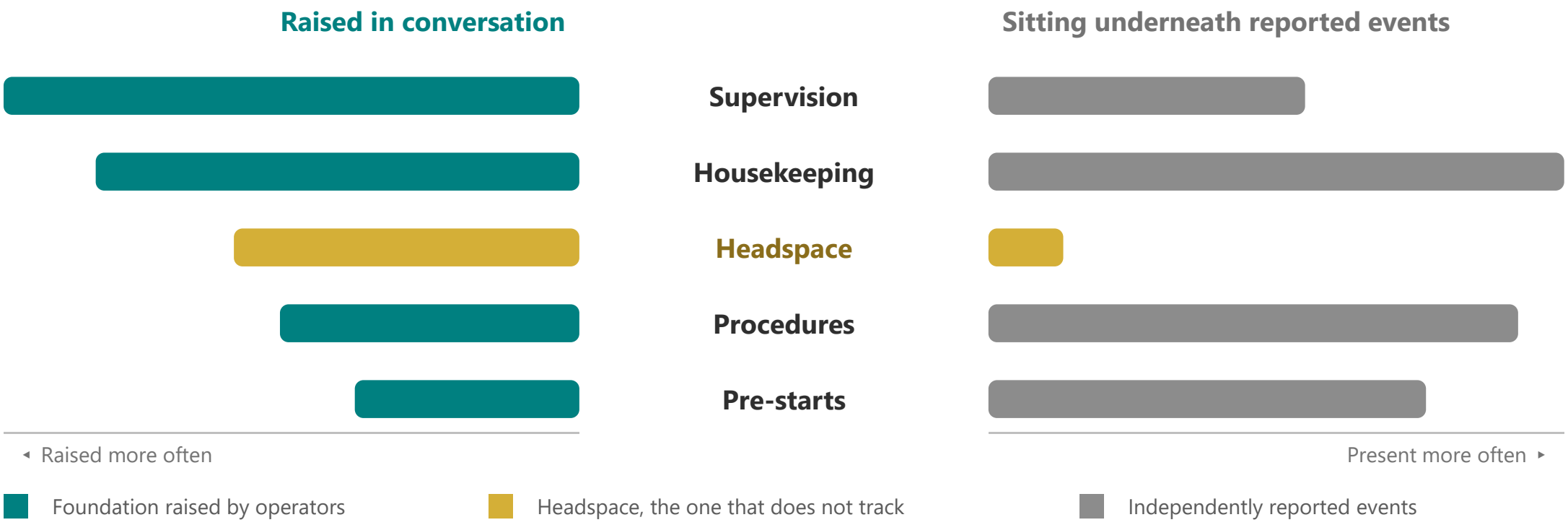
**Incident Data**

*The result — one clear output*

## Lead Indicators for Follow Up or Action

# Is the Signal Real?

If anonymous conversation produced noise, it would line up with nothing. It lines up.




*Ranked, not scaled. Bar lengths compare foundations within each side and are not comparable between the two sides.*

**Calibration, not confirmation.** The registers, meaning incidents, hazards and critical control verification, are not the standard of truth here. They cannot see this layer. They are simply a second, independent instrument. The foundations operators raised anonymously are the ones sitting underneath what was reported through a completely separate system.

# And One Thing Nothing Else Sees

**Headspace was the third most raised foundation in conversation and sits underneath almost nothing in the registers**

Raised in conversation

**1 in 6**

Underneath reported events

**1 in 25**

***Fatigue, distraction, stress and production pressure do not appear in a hazard register, because a hazard register is not where anyone writes that they did not sleep.***

- ❑ An audit cannot ask it. A task observation cannot see it. Critical control verification has no field for it. And an informal chat may well surface it, then it leaves with the person who heard it.
- ❑ This is the leading indicator the site had no instrument for. It is the condition present before the event, not the record left after it.
- ❑ That is the argument for a foundations layer: not a second opinion on what the registers already know, but visibility of the stratum underneath them.

**Proof of concept:** the foundations layer is measurable, it calibrates against independent reporting, and it surfaces a precursor no existing instrument on site can capture. That is what earns the next stratum.

# Early Outcomes

*Consistent with the direction observed at a previous operation, and with what the trial is showing so far*

## More consistent

**Safety Interactions**

Leaders and supervisors working from a common framework, the same language and the same quality of conversation across shifts.

## More frequent

**Participation in Risk Discussions**

Workers initiating conversations, raising hazards and actions they previously would not have flagged.

## More confident

**Frontline Decision-Making**

Workers better able to recognise changing conditions and respond, rather than waiting to be told.

# What We're Claiming, and What We're Not

**What we're claiming**

- Early results suggest structured foundation conversations reveal information not captured elsewhere.
- The framework works with peer-to-peer, crew, supervisor or management conversations.
- Individual responses are not attributed to a person.
- Foundation topics can be updated by the operation as risks change.
- The purpose is to start better conversations that can be measured over time.

**What we're not claiming**

- This is not proof of effectiveness yet. The dataset is still growing.
- It is not designed around supervisor-to-worker interactions.
- It is not anonymous in every conversation setting. The protection comes from removing personal attribution, not removing people.
- The questions are not fixed forever.
- It is not replacing audits, observations or Critical Control Verification.

# What This Means for the Industry

***Meaningful safety improvement doesn't require complex or resource-intensive programs. It requires better conversations, and the conditions for those conversations to be honest.***

**01** **Designed for mining but can be applied to all industries**

Built by an operator who works in underground, for the conditions that exist underground: limited connectivity, time-pressured, high-consequence.

**02** **Enhances, not replaces, assurance**

SafeStrata works alongside existing ICMM-aligned processes. It fills the gap between verification and genuine worker understanding.

**03** **Scalable without complexity**

No significant training required, no administrative overhead. A tool that gets used is more valuable than a tool that is perfect.

# Next Questions We're Testing

**Does the signal remain stable over time?**

**Can response quality be maintained as the system matures?**

**Does the foundations signal predict where hazards emerge?**

*These are open questions. We would rather put them on the slide than pretend they are answered.*

IN CLOSING

# SafeStrata

*Let's Talk Safety Foundations*

The trial is underway at Snowy River Mine.
Further papers will document what we find.

*But the principle is simple:*

**If we create the conditions for an honest conversation, workers will have it.**

Kylie Harris | kylie.harris@enduramining.com