



Quarterly Report

Mineral Mines and Quarries Inspectorate

APRIL, 2024



Resources
Safety & Health
Queensland



Contents

- 3 From the Chief
- 4 Message from the deputy
- 5 Regulator activity
- 6 The numbers
- 7 Serious accident & frequency data
- 8 High Potential Incident & frequency data
- 9 Incident focus – Familiar equipment used in unfamiliar setting
- 10 Incident focus – Exposure to Post-Blast Fumes underground
- 11 Incident focus – Worker struck by oversize rock
- 12 Interstate and around the world
- 13 Health Hub- Alcohol, illicit drugs and prescription medications
- 15 Key engagement & activities
- 16 Contacts and emergency number

Unless otherwise indicated, all data is current at this date: 2/04/2024

Message from the Chief Inspector



Hermann Fasching, Chief Inspector Mineral Mines and Quarries

The Queensland mining industry suffered another tragic loss in January when a coal mine worker was killed after being pinned between a light vehicle and heavy vehicle suffering major crush injuries. Incidents involving vehicle collisions continue to be one of the top hazards across the mineral mining and quarrying sector. These incidents include vehicles colliding with other vehicles, plant, structures and people.

Vehicle collisions are preventable. I ask every site and every worker to review their site safety and health management systems, operating procedures and work instructions around vehicles.

- Identify the hazards
- Assess the risks and identify controls necessary to reduce the risks.
- Implement controls and ensure every worker understands the risk and the controls.

In October last year sites held Safety Resets, the theme of which encouraged workers to identify hazards and stop work if the situation is unsafe. I want to remind all workers of this message and that if you see an unsafe situation report it to your supervisor or the site senior executive. If your concerns are not addressed, you should contact the inspectorate.

Message from the Deputy Chief Inspector



Trevor Brown, Deputy Chief Inspector Mineral Mines and Quarries

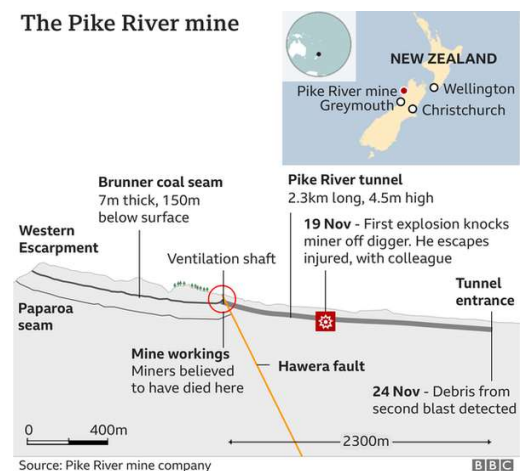
How do you feel when you take a short cut or fail to ensure effective safety controls are in place, but you achieve a significant advantage? Now weigh that up against how you would feel if you lost 29 work mates in a single tragedy.

This was just one of many thoughts I had during a recent trip through New Zealand where I visited the Pike River memorial in Atarau, near Greymouth in the South Island. Here I spent time paying my respects to those lost and those loved ones left behind and reflecting on my own working career and choices made.

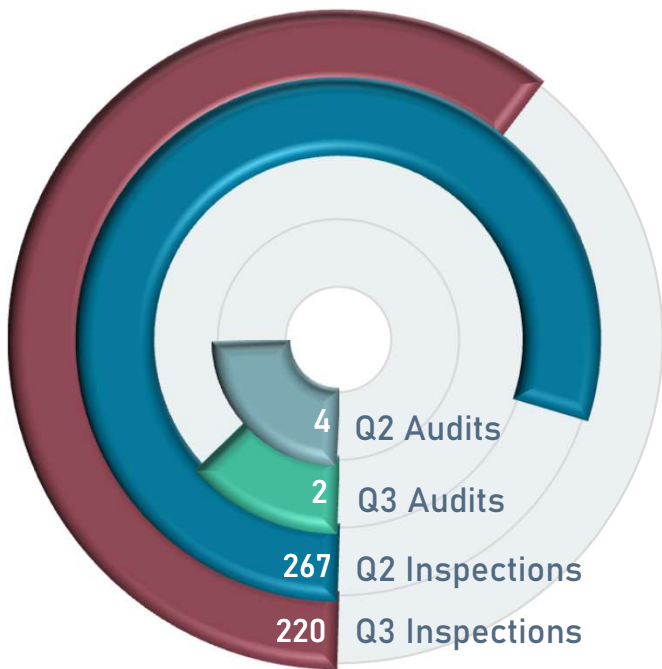
Incident investigations often show a failure to do effective change management processes. A risk-based legislation has the under-pinning intent of allowing for innovation and improvements to safety and health standards through effective risk management processes including change management. The most fundamental question we must always ask with any process change is "will this change improve health and safety outcomes?" if the answer is "no" or "I'm unsure" then the next question should be, "what is the real driver for change?". At this point, you need to reflect on not only your legislative obligations but more importantly my opening statement.



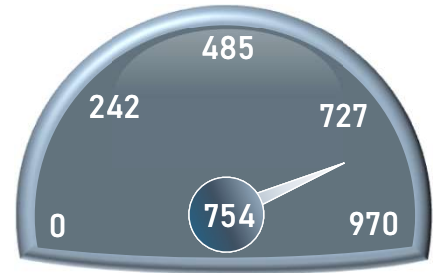
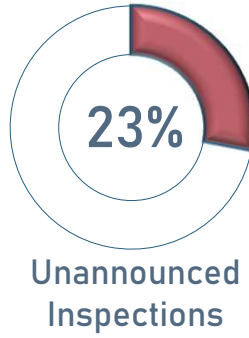
The Pike River mine



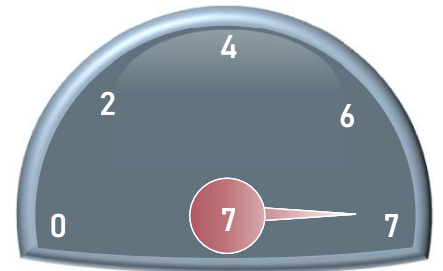
Regulator activity



Complaints
in FY24 YTD **26**

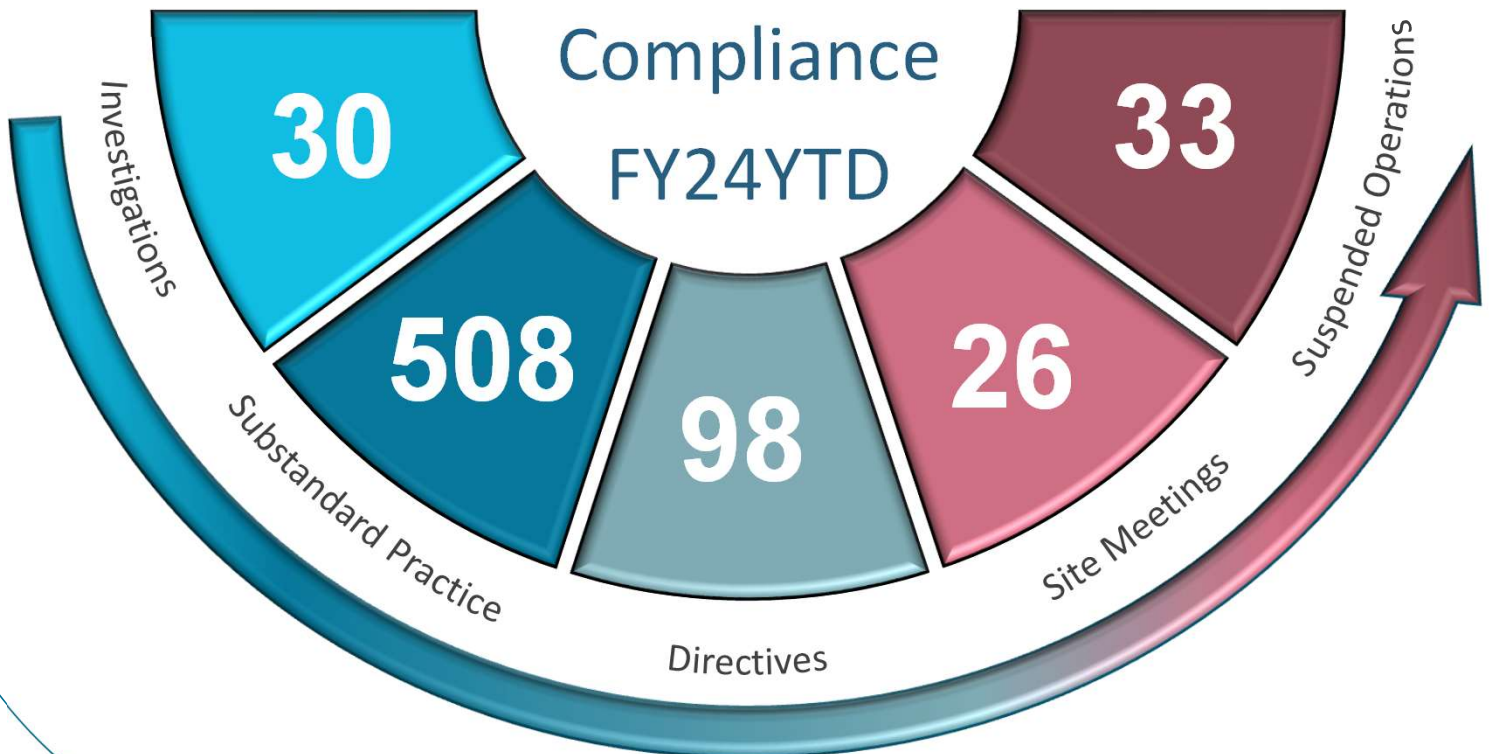


FY24YTD completed inspections



FY24YTD completed audits

A link to compliance data on the web can be found below



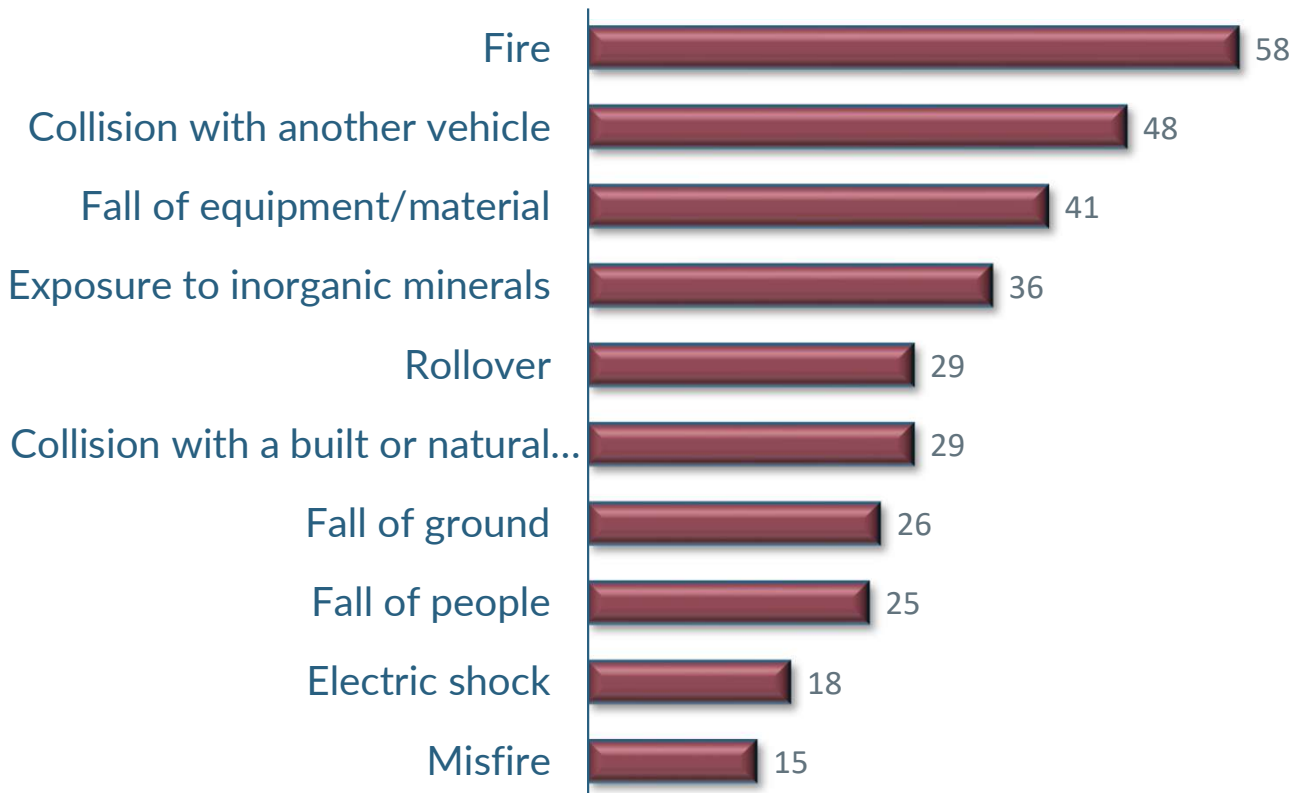
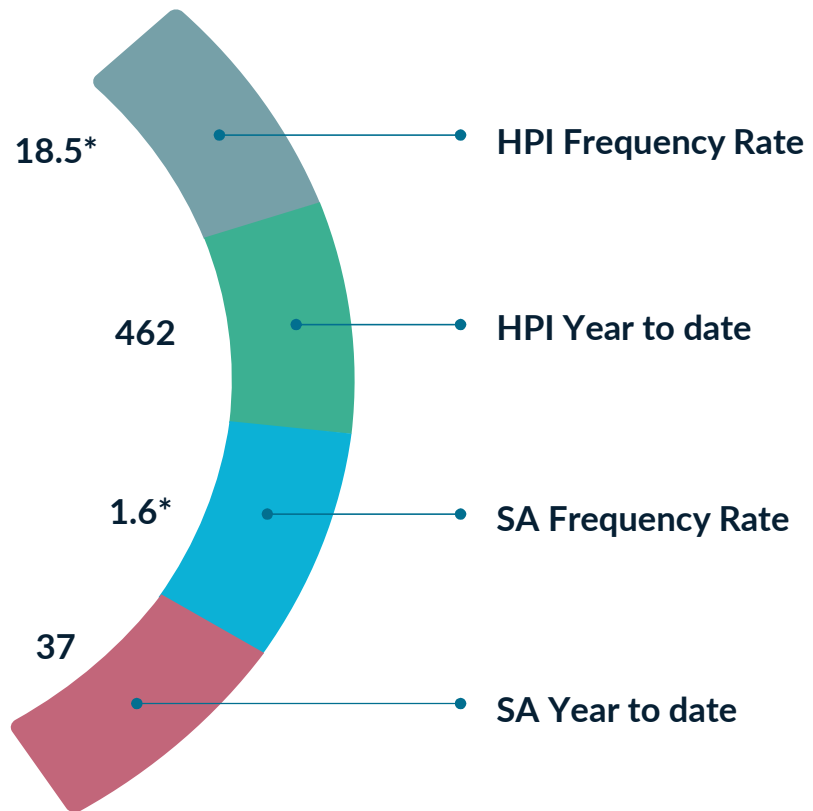
The numbers

FY24YTD

Industry worked
25.74 Million Hours**

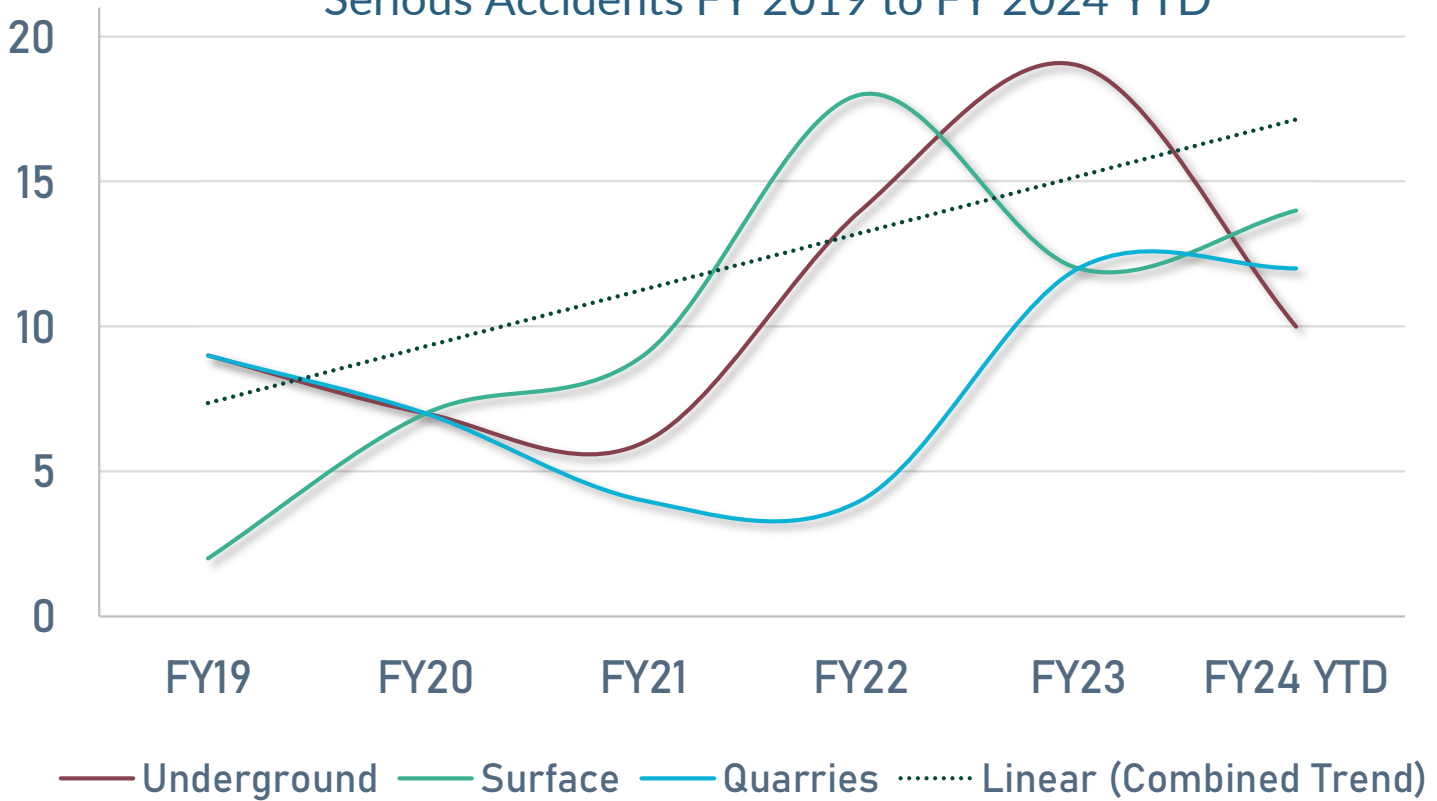


0 Deaths

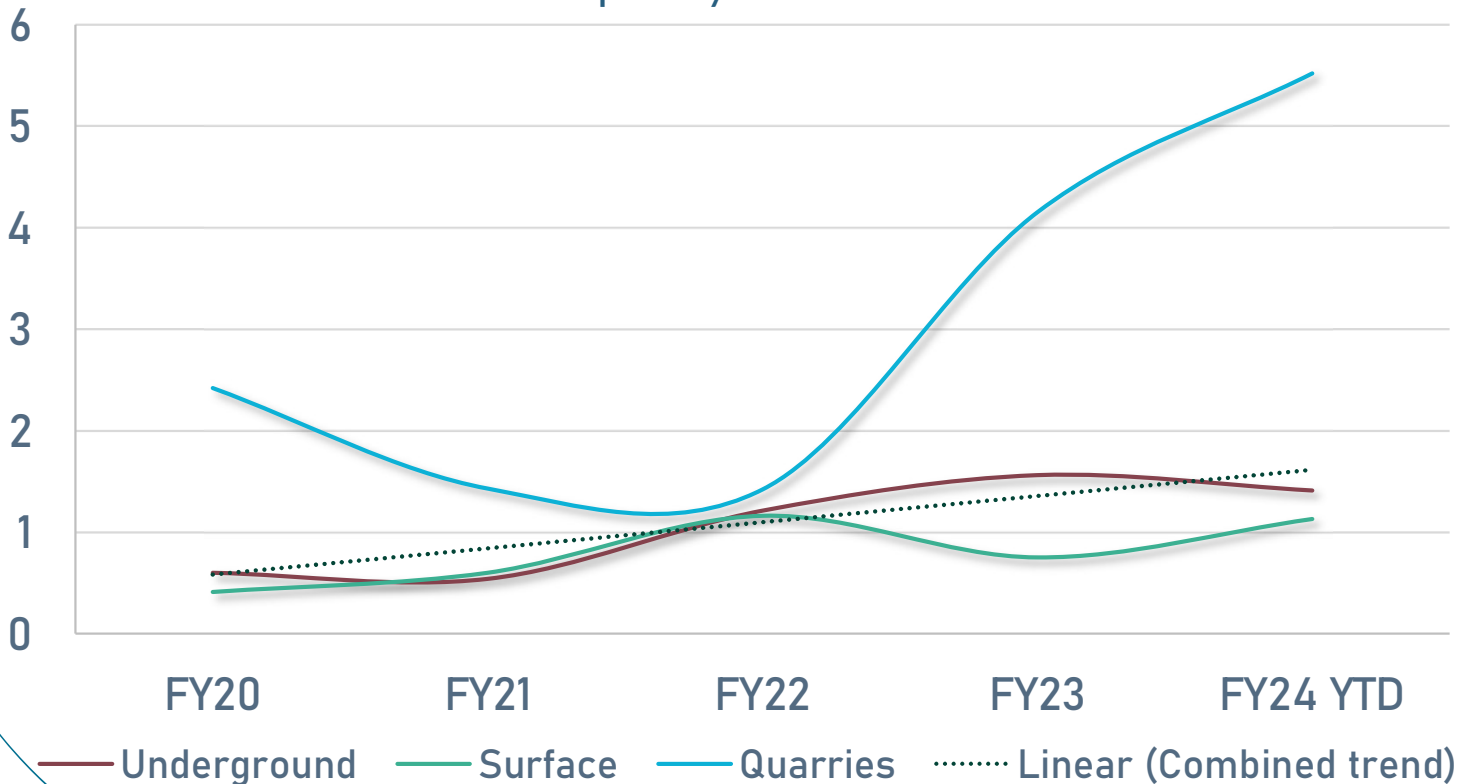


Trends*

Serious Accidents FY 2019 to FY 2024 YTD

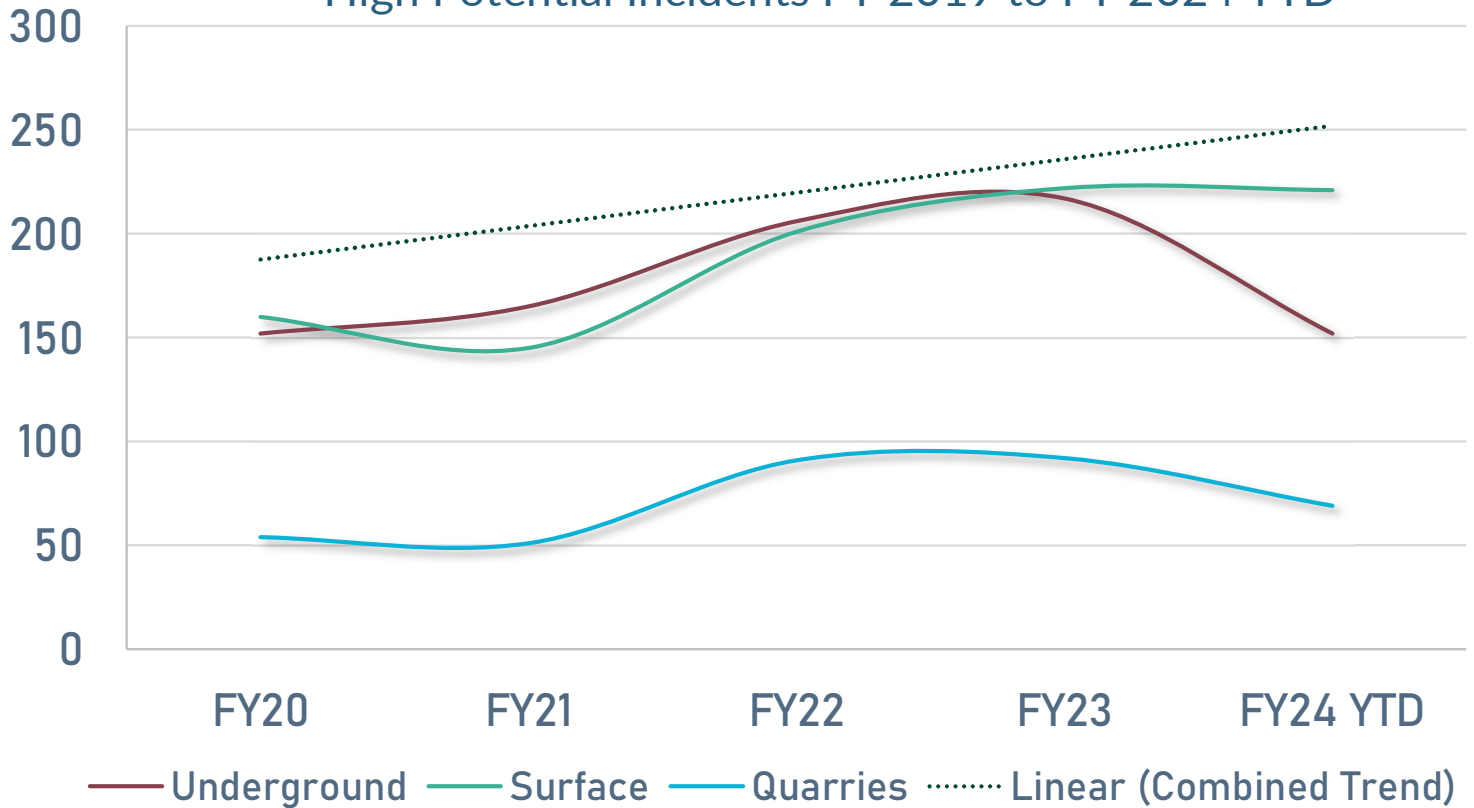


Serious Accident Frequency Rate FY 2019 to FY 2024 YTD

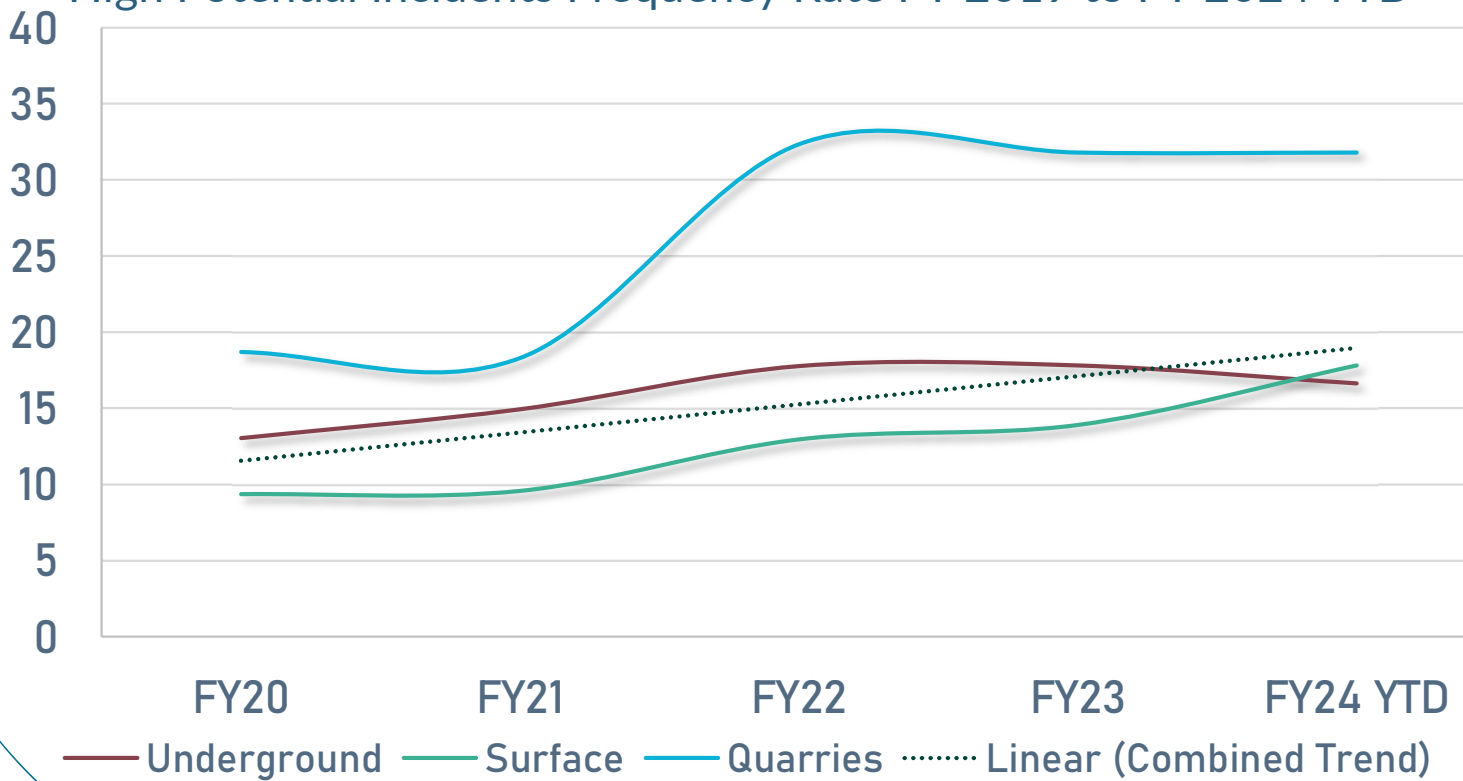


Trends*

High Potential Incidents FY 2019 to FY 2024 YTD



High Potential Incidents Frequency Rate FY 2019 to FY 2024 YTD

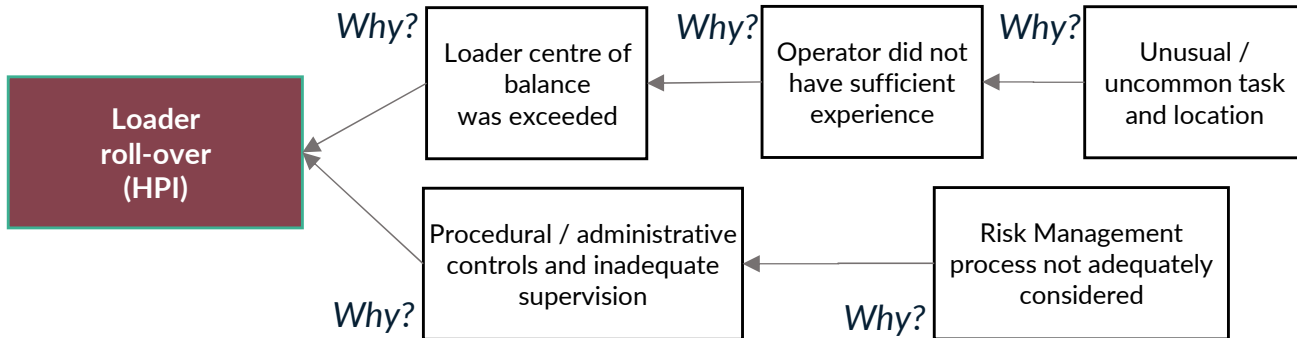


* Due to the nature of data collection these figures may vary slightly

INCIDENT FOCUS

Familiar equipment used in unfamiliar setting

A sales-floor loader operator in a CAT 982M front end loader was tasked with topping up the bund of a pit ramp. The SSE, Supervisor and loader operator recognised the potential roll-over hazard and elected for the procedural / administrative control (loader positioning) as the preventive measure. Alternative higher order controls such as elimination of the rollover risk by using an excavator to top the bund or tipping material onto the ramp and then pushing up onto the bund were not used. The operator positioned the rear tyres facing directly up the ramp however the front tyres were angled 45° towards the bund and when the bucket was raised to tip onto the bund, the loader overbalanced and rolled onto the side. The operator was shaken but unhurt.



Figures 1 & 2 – Photos showing the rolled front-end loader

Contributing Factors

Operator Factors

- Experienced in using loader on flat ground loading trucks, but not tipping on sloping ground
- Did not recognise the tipping point of the loader.

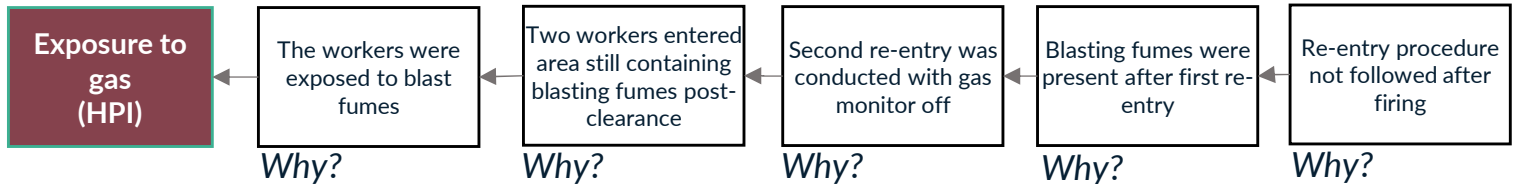
Risk Management / Supervisory Factors

- Over-reliance on administrative controls for a recognised hazard with serious consequence.
- Implementation of controls left to a relatively inexperienced operator.
- Did not recognise the implications of operator using HME in unfamiliar task and work environment.

Key takeaways

- Tasks involving mobile plant where rollover / tipping is identified as a hazard (ie crane operation, boom fork-lifting and loading / tipping on sloping ground) must be thoroughly risk assessed and effectively supervised
- Higher order controls must be considered in preference to administrative controls,
- Tasks where operators are using familiar equipment in unfamiliar context or location need higher levels of risk management and supervision.

Two workers entered the underground mine workings after the area had been cleared for re-entry, resulting in workers being exposed to blast fumes, including a high concentration of carbon monoxide gas (CO).



Contributing Factors

Safety and Health Management System:

- The re-entry strategy was not appropriate to the area
- Re-entry procedure did not cover all work areas
- Training of personnel in the use of gas detection equipment was insufficient
- Another incident involving blasting fume exposure had occurred at the mine earlier in the month and corrective actions were not yet completed

Plant and Equipment:

- Gas detector used by the workers entering the area were not bump tested or zeroed
- Gas detector used for re-entry had a faulty ammonia (NH₃) sensor.

Human Factors:

- The manufacturer's and site's procedures for gas detectors were not followed.
- Re-entry personnel conducted the second re-entry while the gas monitor was turned off and the area was assumed clear of blast fumes and barricades were removed.
- Re-entry personnel continued to use a gas monitor that had a sensor error.
- There was opportunity to detect blasting fumes in the area when one of the re-entry crew exited his LV and turned off the water sprays for the stope, however the gas detector was not used when this task was carried out.
- Workers continued to work in the area for an extended period even though the gas detector was in high alarm mode.



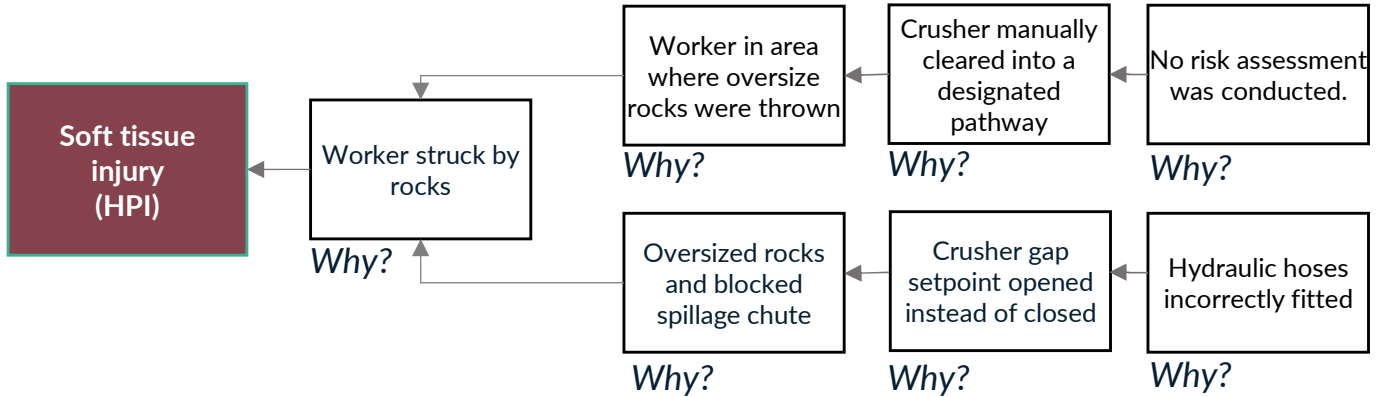
Key takeaways

- Areas where mining operations are to be carried out must be appropriately identified for post-blast clearance. Ensure areas remain barricaded that have not been gas tested or cleared.
- A gas detector is a lifesaving device and must be maintained and used accordingly. Never turn off an alarming gas detector and always bump test a gas detector after a High Level, TWA or STEL alarm.
- Personnel using gas detectors must be trained and deemed competent in their use (including Manufacturer's requirements and instructions, initial inspection, calibration, bump testing, zero checks, recharging and clearance of peaks, alarm functions and response).
- Extension wands can increase the distance between the person using the gas detector and the blast fumes.
- Remote-monitored gas detection equipment can reduce the risk of blast fume exposure to personnel.
- Plans for Primary and Secondary ventilation must consider appropriate clearance of blasting fumes and re-entry operations.

INCIDENT FOCUS

Worker struck by oversize rock while clearing a blocked crusher

A worker involved with clearing a blocked cone crusher sustained soft tissue injuries to his left hip and right ankle. The worker walked into the vicinity of the crusher clearing activity and was struck by a rock that was thrown down from an access platform.



Figures 1 & 2 – Photos showing the area being reported

Contributing Factors

Safety and Health Management System (SHMS)

- The SHMS did not include a procedure for safely clearing oversize rocks from a clogged crusher.

Engineering

- Incorrect plumbing of hydraulic lines on the jaw crusher. Hydraulic hoses not labelled on disassembly.







Procedures

- No risk assessment of communication of job roles between workers prior to commencing the task.
- No exclusion zone or barricade was in place for dropping rocks from above onto a designated pathway.

Key takeaways

- Label hydraulic lines on disassembly and check for correct plumbing connections prior to starting equipment
- Always establish an exclusion zone before disposing of material from a height
- Communicate roles to team members before commencing tasks
- Complex or unfamiliar tasks must have a written risk assessment.

Interstate and around the world

Location	What has been happening
	<p>Russian crews end 2 week rescue effort. <i>Apr 2024-</i> Authorities in Russia's Far East on Monday called off a two-week rescue effort to reach 13 workers trapped deep underground in a collapsed gold mine and declared them dead. The miners got trapped on March 18 at a depth of about 125 meters (400 feet) when part of the mine collapsed in the Zeysk district of the Amur region, about 5,000 kilometers (3,000 miles) east of the capital, Moscow. Further information</p>
	<p>Unregulated open cut gold mine. <i>Feb 2024-</i> The collapse of an illegally operated open-pit gold mine in central Venezuela killed at least 16 people and injured several more, state authorities said. The accident took place in the Angostura municipality Tuesday, when a wall collapsed at a mine known as Bulla Loca, which can only be reached by an hours-long boat ride. Further Information</p>
	<p>Worker clearing blockage in crusher <i>NZ Safety Alert Apr 24</i> An employee was asked to clear a blockage. When the team lead went to check on the worker he found him inside of the rails surrounding the crusher, standing on the edge of the crusher, prodding the blockage with a steel bar. The crusher was live at the time. Further information.</p>
	<p>Wheel rim ejected during tyre inflation. <i>Safety Alert Feb 24.</i> The rim of a haul truck wheel assembly ejected from the tyre on Friday 15 December at 5.45am. The wheel assembly was on the mine's workshop floor. The tyre was being inflated after having the rim o-ring seals replaced. The rim weighing around 2.5 tonnes was ejected about 1.5 metres above the tyre. Further information</p>
	<p>Hydraulic fluid contamination resulting in uncontrolled movement. <i>Mar 2024 Safety Bulletin #15.</i> WorkSafe WA is aware of recent incidents where hydraulic fluid contamination has resulted in the uncontrolled movement of the basket on elevating work platforms (EWPs). This includes the loss of performance related to platform level and jib function. Further information</p>
	<p>US miner dies after being struck by a metal slurry pipe. <i>Fatality Alert Mar 2024</i> The miner was removing the last bolt connecting two metal slurry pipes when the pipe broke free and swung in his direction. Further Information</p>

Toolbox Topics

- ❖ *Changes at the mine*
- ❖ *Fall hazards*
- ❖ *Mobile Equipment*
- ❖ *Ground Control*

Crane Safety

- Know your load chart and weight to be lifted so you can avoid tipping.
- Use Operator's Manual as a guide for correct inspection procedures.
- Refer to operating policies/procedures for proper hand signals.
- Crane must be level when making lift.
- Never attempt to swing load before lofting. "Side Loading" the boom could cause collapse.
- Survey work area for pad conditions, overhead power lines, pipelines, etc
- When operating a crane in proximity of overhead power lines, NEVER permit people to be in location where they can contact the crane or load.
- A competent person must inspect all rigging before each use



Alcohol, illicit drugs and prescription medications

Alcohol, illicit drugs and prescription medication are present in our communities. Figure 1 shows alcohol and drug consumption and use estimates and trend data collected from wastewater treatment plants in three cities and seven regional centres in Queensland in 2023.

Substance	Capital/City		Regional Centre	
	Consumption	Trend	Consumption	Trend
Alcohol ²	950	↓	900	↓
Cannabis (THC)	190	↑	280	—
Methylamphetamine	30	—	42	↑
MDMA	1.9	↑	1.49	↑
Cocaine	6.0	↑	6.2	↑
Heroin	2.4	↓	0.6	↑
Ketamine	3.1	↑	2.2	↓
Oxycodone	3.0	↓	6.2	↑
Fentanyl	4.0	↑	4.5	↑

Increase (↑) Decrease (↓) Steady (—)

Figure 1 - Queensland August/October 2023 alcohol and drug consumption and use estimates and trends when compared with the previous collection period in June 2023.

Furthermore, the level of harm caused by the consumption of alcohol and drugs is also reflected in the safety outcomes in the community. From a public safety perspective, alcohol and drug driving/riding are the number two and number three ranked behaviours contributing to fatal road crashes in Queensland. Road crash statistics show that fatal accidents involving drink driving/riding increased by 16.9% and those involving drug driving/riding by 30.3% from 2017 to 2022. From an occupational safety perspective, the mineral mines and quarries inspectorate is also aware of high potential incidents and serious accidents where alcohol or drugs were detected post-incident and may have been a contributing factor.

Persons who work at mines and quarries are drawn from communities close to operations and also from outside of those communities (e.g. residential, DIDO, FIFO workers). The consumption and use of alcohol and drugs by workers often reflects the consumption patterns of the communities in which workers live and recreate. The statistics indicate that risks associated with use and abuse of alcohol, drugs and prescription medication represent a risk to safety at mines and quarries.

All persons at a mine or quarry have an obligation to manage risk of injury or illness to himself or herself or any other person so that risk is at an acceptable level. Consumption and use of alcohol, illicit drugs and prescription medication either during or outside of work hours can impair a person's ability to carry out the person's duties at a mine or quarry.



Alcohol, illicit drugs and prescription medications *cont.*

Section 84 of the MQSHR states that a person must carry out operations at a mine, or enter an operating part of a mine, if the person is under the influence of alcohol, or is impaired by a drug, to the extent the alcohol or drug impairs, or could impair, the person's ability to carry out the person's duties at the mine.

When implementing a policy or processes to manage risk associated with persons at a mine who may be under the influence of alcohol or impaired by a drug, the operator and site senior executive must:

1. Identify the hazards, analyse risk, implement risk reduction measures control measures, and monitor risk. (Note: The site senior executive must keep a risk management record with the names of the persons involved in the risk assessment and their position; a description of the hazard, the method used to assess the likelihood and consequences of the risk, and the controls proposed to reduce the risk.
2. Develop or change the alcohol and drug policy or processes at the mine or quarry in consultation with workers, or appropriate site safety and health representatives and committees.
3. Regularly review and audit the effectiveness and implementation of the policy and processes to ensure that risk to persons is at an acceptable level.



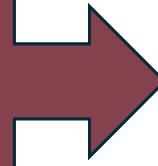
Key Training

KEY TRAINING – BOE LAW EXAM SCHEDULE FY24Q3

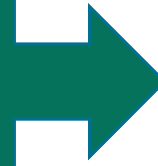
April	Brisbane	Monday 8
	Dysart	Friday 12
	Mackay	Wednesday 17
	Moranbah	Thursday 18
	Rockhampton	Thursday 7
May	Brisbane	Monday 13
	Dysart	Friday 124
	Mackay	Wednesday 15
	Moranbah	Thursday 23
	Rockhampton	Thursday 2
June	Brisbane	Monday 3
	Dysart	Friday 21
	Mackay	Wednesday 19
	Moranbah	Thursday 20
	Rockhampton	Thursday 6

Unless otherwise
stated, exams
commence at 9am

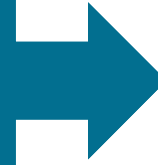
Use this QR code to access other contact information and to report an incident



Use this QR code to access the Mining and Quarrying Safety and Health Act



Use this QR code to access to learn how to make a complaint and get advice



Townsville: (07) 4447 9282

Mt Isa: (07) 4745 4117

Brisbane: (07) 3330 4273

Web: RSHQ.qld.gov.au



Resources
Safety & Health
Queensland