Incident periodical

High Potential Incidents summary

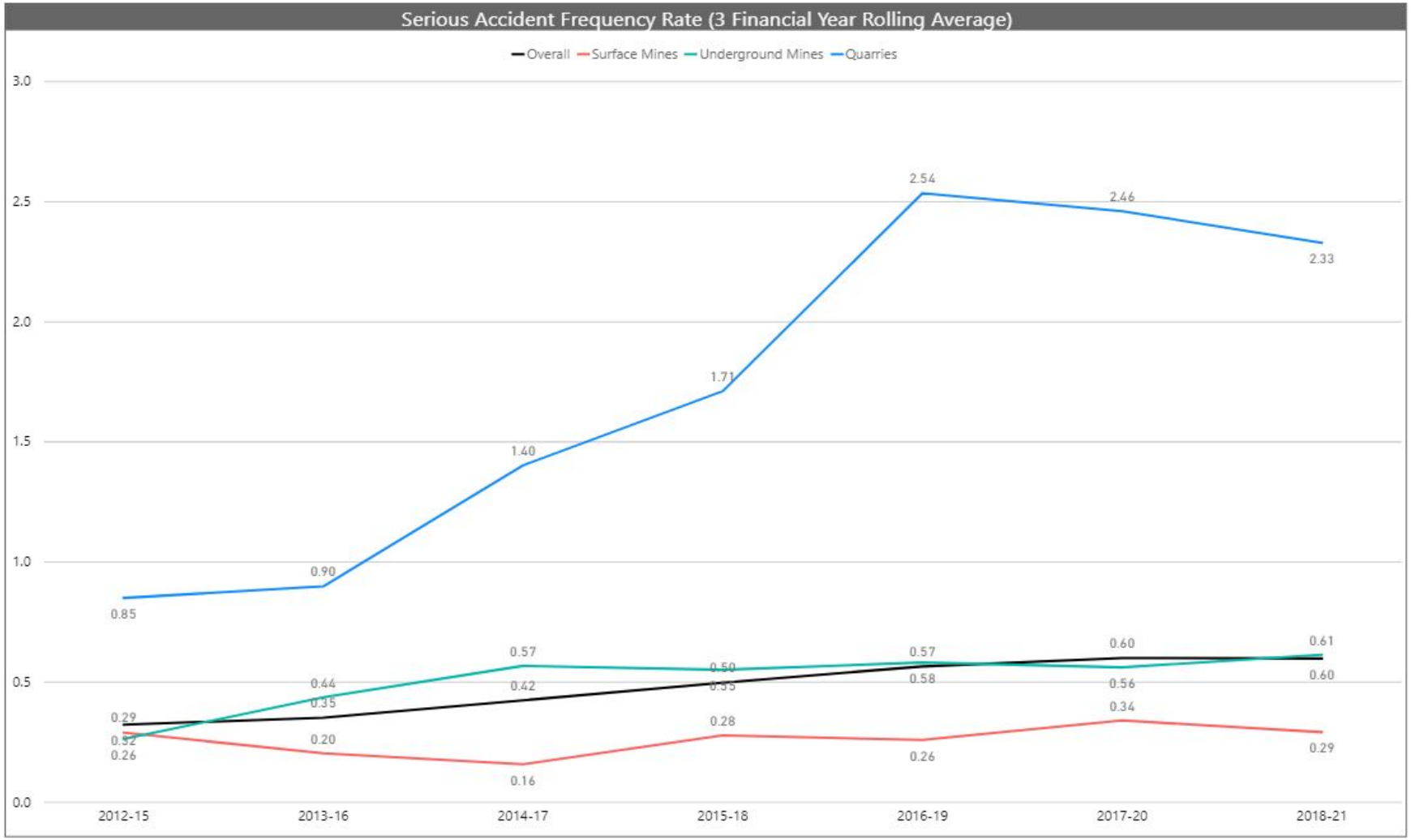
Queensland Mineral Mines & Quarries Inspectorate

October 2020

Mineral Mines & Quarries Inspectorate

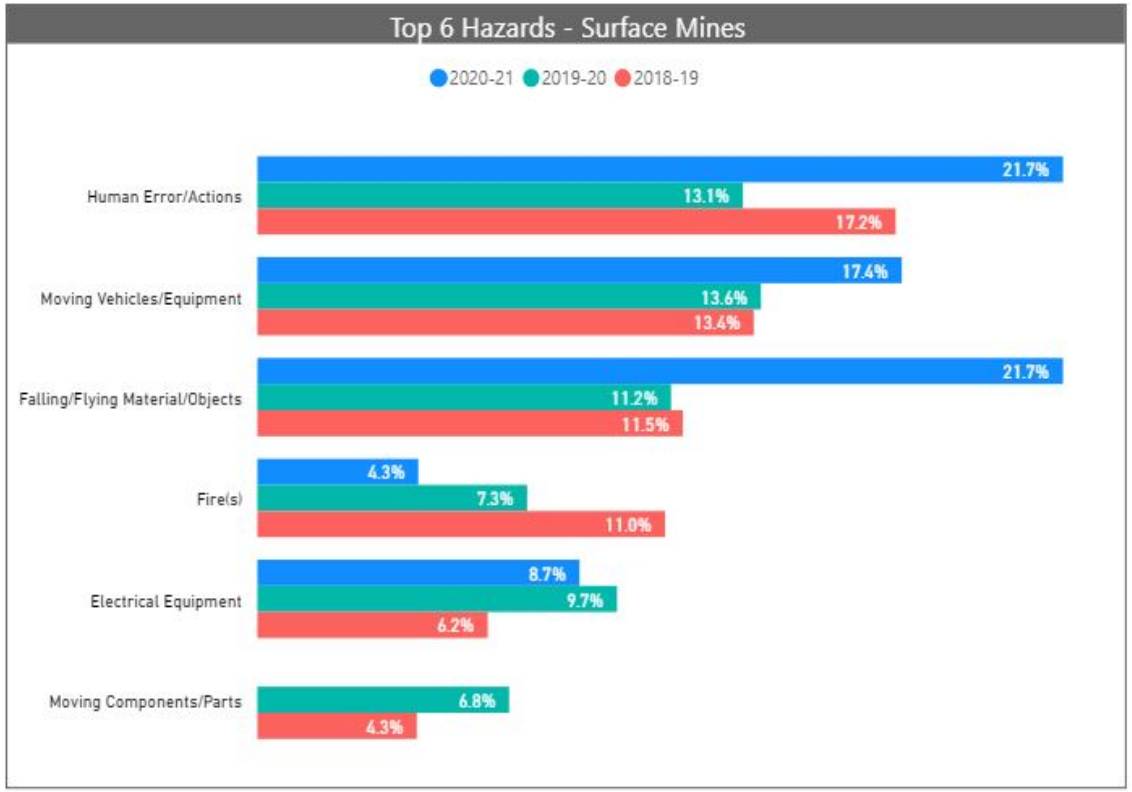
Resources Safety & Health
Queensland

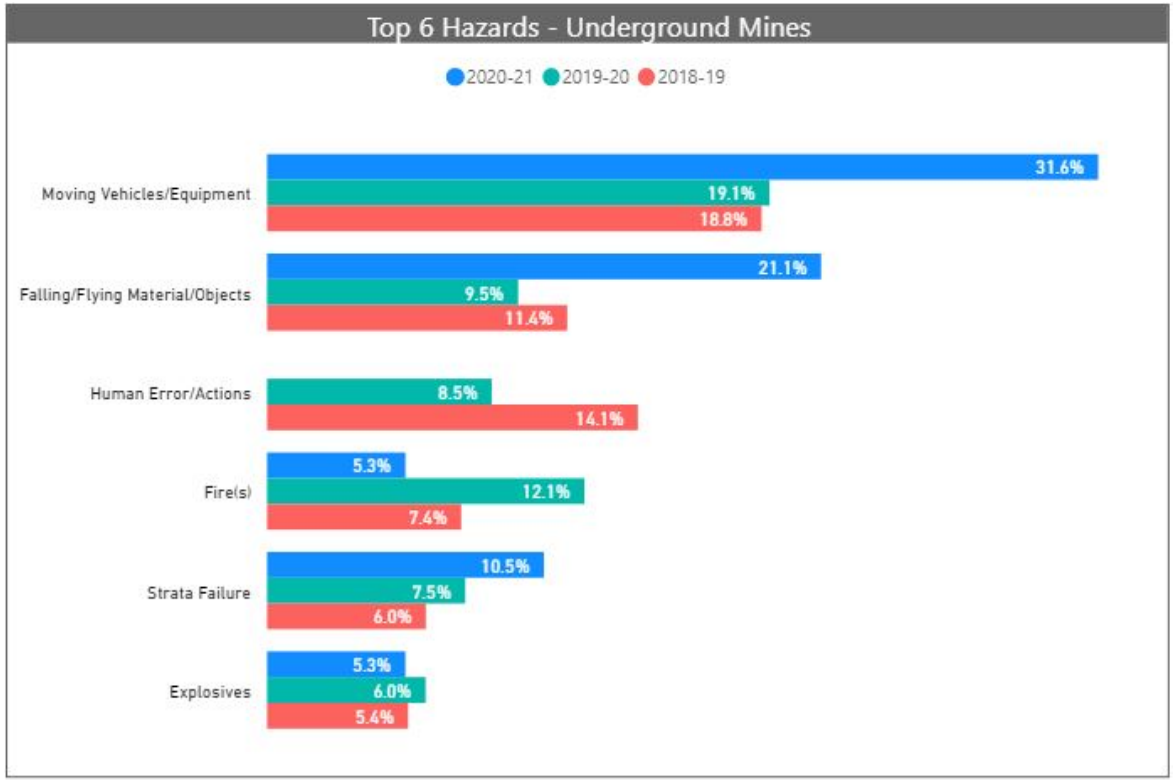
Serious Injury Frequency Rate by industry



Top 6 hazards

These graphs compare annual data of the top 6 hazards involving Serious Injuries by mine type.





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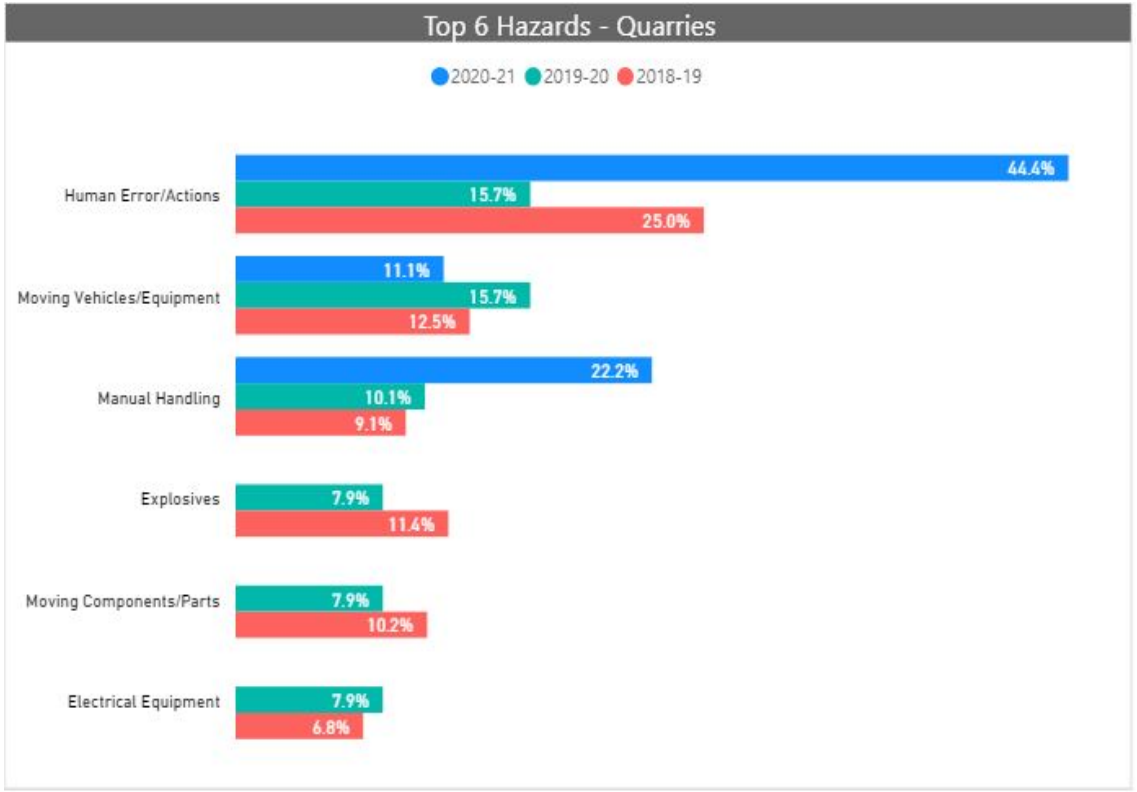

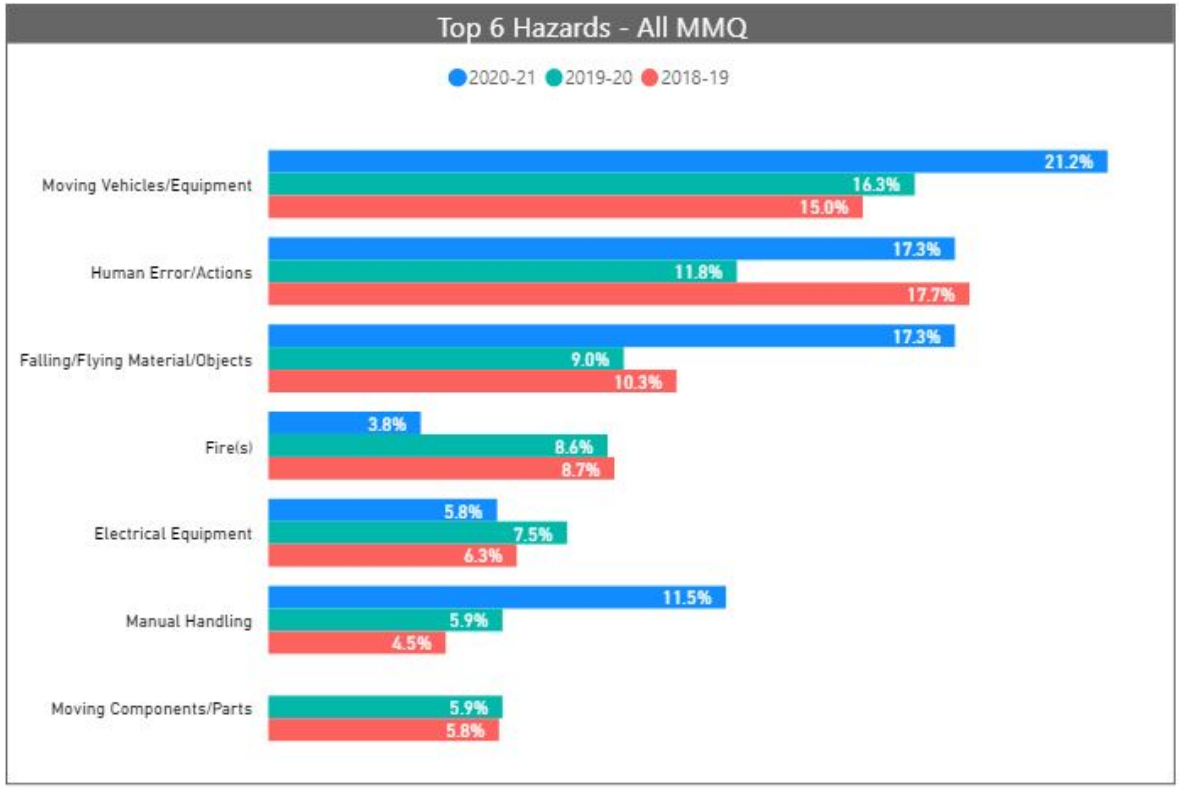

Water at high pressure strikes worker

On 5 October 2020, a tank cleaning head was being used to clean internal pipework when it was ejected through the open hatch. The worker was struck by the high pressure water at 540 bar (7800 psi) from their knee up to their neck causing:

- Minor abrasions/lacerations and swelling to knee
- Pressure marks on neck area.

Cleaning head

Water at high pressure strikes worker

Causes

There were two options for preventing the cleaning head from being ejected from the 1.5 m pipe but neither of them were in place:

- An anti-withdrawal device fitted into the cover which only allows the hose to be fed through it.
- Fitting the cover back in such a way that the remaining gap does not allow it to escape.

The JSA was signed off requiring the cover be put back, this did not happen.

The JSA stated that the reason for putting the cover back on was to prevent flying scale, not to prevent the cleaning head from escaping.

The cleaning head turned around inside the pipe on its own accord as there was no device fitted to prevent this occurring. This turn around is thought to be a rare event,

One of the Life Saving Rules was to use the High Pressure Water Jetting Checklist. This checklist was not used.

Water at high pressure strikes worker.

JSAs must identify all the foreseeable hazards at each job step, even if they are rare events, so that effective controls can be in place prior to a job commencing.

Recommendations

- The ejection of the high pressure cleaning head through the open hatch must be considered as part of the JSA development. [Administration]
- Hatches and other protective barriers must be in place prior to high pressure cleaning tasks. [Separation]
- The mine management structure must provide for a worker to be appointed who has the responsibilities and competencies to oversee contractor tasks. [Administration]
- Original equipment manufacturer, where possible, should be involved in risk assessments to ensure that all hazards have been identified especially when the plant is of a specialist nature. [Administration]

Inrush of water and tailings

On 27 October 2020, a crosscut was blasted underground and after a while water started to seep out from the base of the drive. The photo on the right shows the water flowing out from the shear zone after it had diminished. The flow increased to 50 l/s and included tailings from the adjacent old underground workings.

The inrush then went along the level and down to the charged decline face 60 m below. The water then backed up to the development level.

No workers were in the decline at the time but this does not detract from the seriousness of the incident.

Inrush of water and tailings.

Causes

Water was encountered previously during the development of the ore drive 20 m above. The water source was believed to be from old workings 50 m below that had been flooded and had a hydraulic head pressure which was able to flow up through a shear zone.

This shear zone was mapped from information from the old workings development and the new development drive 20 m above, but was not added to the design plan of the level below.

The existence of the shear zone was not shared widely with the mining teams by the geology section. As a consequence no probe drilling was identified to check for water during the design or at a meeting prior to taking the development cut.

Access to geological information was restricted to local drives on the server limiting access between geology and engineering.

Inrush of water and tailings.

Recommendations

- A current old workings management plan based upon sound geological data and historical records must be available and communicated to all workers who have been identified as needing to know. Plans must include all variations and critical information on the old workings characteristics. [Administration]
- Controlled drainage of old workings should be undertaken prior to working in proximity. [Elimination]
- Working in proximity to old workings must not be undertaken unless it is known that there is no head of water that can impact on current mining operations. [Administration]
- Changes to a design plan must be communicated widely (where possible face to face) to all workers who have been identified as needing to know. [Administration]

For further reading a link is provided to the report on the Gretley Mine Disaster in 1996 where four workers drowned - https://www.resourcesregulator.nsw.gov.au/__data/assets/pdf_file/0004/87160/Gretley-Inquiry-summary.pdf

Road train trailer rollover

On 20 October 2020, at the leach pad, the driver of the road train tried to empty the rear trailer first but approximately 25 tonne of material was left in it. The driver then emptied the lead trailer. When the road train then travelled down the exit ramp, it became out of control and the rear trailer went off the side of the haul road dragging the lead trailer with it.

The driver was not injured.

Road train trailer rollover

Causes.

- Emptying the lead trailer first which was against acknowledged procedure.
- Travelling down the ramp with an empty lead trailer and material inside the rear trailer.
- Load distribution lowering braking effectiveness.

Other potential causes.

- Travelling too fast for the loaded condition.
- In a hurry as it was the last load of the day.
- Fatigue – Allowed to work in excess of the rostered timetable.

Road train trailer rollover.

Recommendations

- Truck driver training and verification of competencies must include instructions on how to dump and why the rear trailer should be dumped first. [Administration]
- Truck drivers should adhere to routine cycle times at all times. Truck driver must be warned against extra loads at end shifts that compromise the routine cycle times. [Administration]
- The mines management structure must provide for a worker to be appointed who has the responsibilities and competencies to oversee contractor tasks. [Administration]

Note - The cameras on mobile plant should be downloaded on a schedule basis. This will ensure that the camera is working and recording the required data.

Contact us

Mineral Mines and Quarries Inspectorate

General enquiries:

- Contact your regional inspectorate staff

Report emergencies, incidents or illness:

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