QUARTERLY REPORT

Extractives industry

2023/24 Q2

October to December

Te Kāwanatanga o Aotearoa
New Zealand Government

WORKSAFE
Mahi Haumaru Aotearoa

About this report

This quarterly health and safety performance report has been prepared by WorkSafe New Zealand to provide extractives-specific information to mining, tunnelling and quarrying operations in New Zealand.

The information is derived from a variety of sources but the predominant source is industry itself, through notifiable incident reporting and quarterly reporting.

The report also contains information on the activities of the regulator, as well as commentary on industry performance and focus areas for regulation.

Operators should use the information presented in this report to assist them in improving safety management systems and undertaking risk assessments at their sites.

Foreword

Our mission is to transform New Zealand's health and safety performance towards world-class. To achieve this requires the commitment not just of WorkSafe New Zealand, but of businesses, workers and a wide range of other players in the health and safety system.

When this quarterly report is published, we will be approaching the completion of the first two years under the amended regulations. For quarrying and alluvial mining operations, the changes have been significant, with these operations all falling under the full regulatory regime.

In fact, the final meaningful change for quarrying operations takes effect on 18 July 2024, with the change to the application of A- and B-grade quarry manager CoCs.

The change means an A-grade quarry manager CoC holder will be required for quarrying operations that have more than four quarry workers ordinarily working at the operation, regardless of whether they use explosives.

For the last two years WorkSafe have worked to educate operators about the new requirements.

Because we are now two years into the regulation amendments and the final changes will be in place in the coming year, our focus will shift to more scrutiny on the details in Extractives operations' systems. We had previously focused on educating and assisting operations to put the required systems in place.

This year we will start to 'audit' how well the required systems have been implemented, including checking the level of compliance with PHMP and PCP requirements at A-grade operations.

We have seen many operations make improvements to their health and safety systems over the last two years and believe the majority of operators have made an effort to meet the requirements of the new regulations.

What we will determine over the next 12 months of work is whether the systems align with the regulatory requirements, or if there are still gaps in compliance.

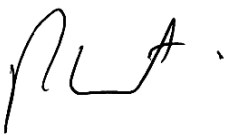
And further, we will identify if gaps in compliance are common across different operators.

We will need to address the individual site issues at the time, but we will also proactively give feedback to industry on the issues that we are finding so all operators are aware of what might require attention at their operations.

We will target the high-risk quarries and alluvial mining operations first – the large, more complex operations.

This assessment process is very similar to the compliance assessment process that was done for mining operations following the first introduction of the new regulations in 2013.

We will likely request information from operations prior to inspection to better prepare us for the assessment. These types of assessments are more biased to checking the system than a typical observational compliance inspection. We are likely to check what the health and safety system says and then check that it is in place, is understood by those on site, and that it is effective.



Paul Hunt
Chief Inspector Extractives

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1.0
Industry profile

IN THIS SECTION:

1.1 Operations

3

Metalliferous opencast mines
Includes one mine under rehabilitation

19

Coal opencast mines
Includes one mine in care and maintenance

7

Metalliferous underground mines
Includes one mine under care and maintenance and two operating tourist mines

1

Coal underground mines
Includes one tourist mine under care and maintenance

6

Tunnels
Does not include tunnels that notified commencement but did not begin operating in the quarter

10

Coal exploration
Three operational coal exploration projects and seven suspended coal exploration projects

73

Alluvial mines
Number of mines that have been verified (62) or have notified of an Appointed Manager to WorkSafe (11)

Includes 2 iron sands mines

997

Quarries
Number of quarries that have been verified (840) or have notified of an Appointed Manager to WorkSafe but not yet verified (157)

An important aspect of understanding the health and safety performance of the extractives industry is to understand its makeup in terms of the number and scale of operations and the number and competency of workers involved.

There were 1,116 active operations in New Zealand as at the end of December 2023.

Active mining operations include those that are operating, intermittently operating, under care and maintenance, or undertaking rehabilitation, as well as tourist mines. Active quarries and alluvial mine numbers include operations that have been verified as actively or intermittently operating (that is, visited by WorkSafe), or have notified WorkSafe of an Appointed Manager.

1.2 People

794

Metalliferous opencast mines
544 FTEs employed by mine operators and 251 FTEs employed by contractors

835

Coal opencast mines
686 FTEs employed by mine operators and 149 FTEs employed by contractors

484

Metalliferous underground mines
305 FTEs employed by mine operators and 178 FTEs employed by contractors

0

Coal underground mines
0 FTEs employed by mine operators and 0 FTEs employed by contractors

419

Tunnels
323 FTEs employed by mine operators and 96 FTEs employed by contractors

9

Coal exploration
4 workers employed by mine operators and 5 workers employed by contractors

597

Alluvial mines
Number of workers is known for 52 of the 73 alluvial mines that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 21 operations

3,182

Quarries
Number of workers is known for 765 of the 997 quarries that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 232 operations

There were 6,320 Extractives FTEs in New Zealand as at the end of December 2023. The numbers of workers will also vary from quarter to quarter. Changes in the number of quarry and alluvial mine workers largely reflect the changes in the number of active operations verified by inspectors. Part of those verifications includes determining the number of workers at each operation.

Note: Typically >95% of mining operations and tunnelling operations submit quarterly reports to WorkSafe, and the numbers of workers are reported directly from these figures.

This was the fifth quarter that quarrying operations and alluvial mining operations were required to submit quarterly reports to WorkSafe. Quarterly reports were provided by 16 alluvial mining operations (22%) and 227 quarries (23%). That is the reason for the significant difference between the extrapolated numbers of workers and the actual number of workers reported for these sectors in Figure 2. WorkSafe will continue to extrapolate numbers of workers for quarries and alluvial mines until the reporting percentage has improved.

Figure 1 shows the total hours worked in Q2 2023/24, reported to WorkSafe in the quarterly reporting. The hours are separated into Employees and Contractors.

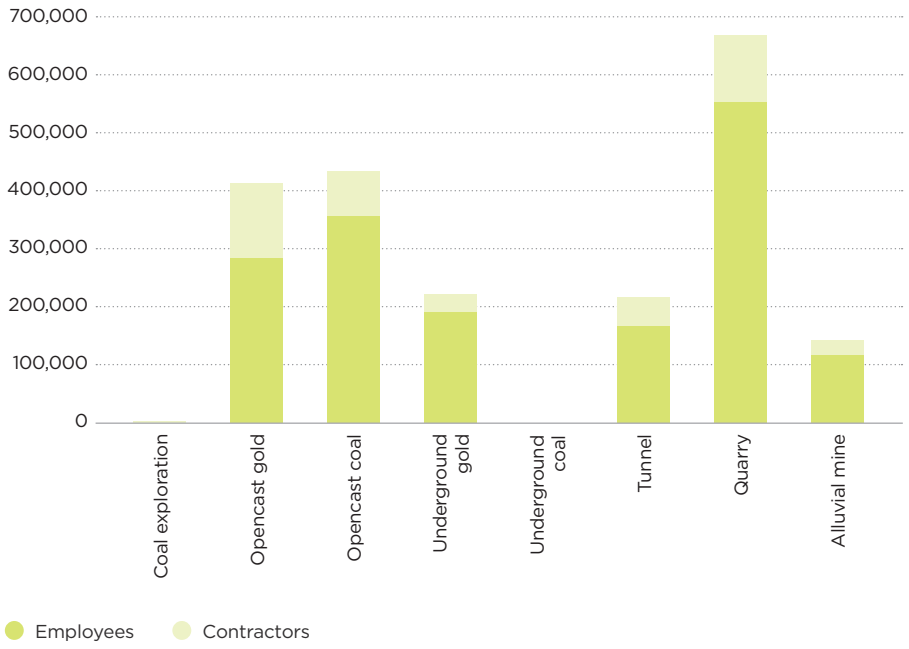

FIGURE 1:
Total hours worked by sector 2023/24 Q2

Figure 2 shows the number of Full Time Equivalents (FTEs) calculated from total hours worked that were reported to WorkSafe in quarterly reports for Q2 2023/24. The hours are separated into Employees and Contractors.

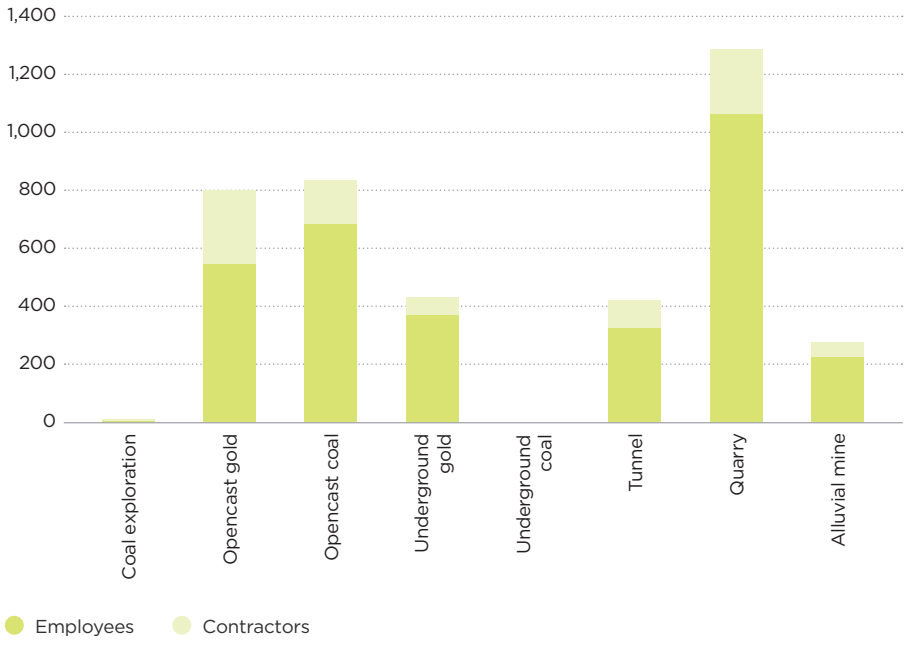

FIGURE 2:
Number of FTEs by sector 2023/24 Q2

1.3 Developing competence

WorkSafe has responsibility for setting competency standards in the Extractives Industry. Improving the competence of the people in the industry is one of the most important aspects of improving health and safety performance. WorkSafe appoints the New Zealand Mining Board of Examiners (BoE) to recommend competency requirements, conduct oral examinations and to issue, renew, cancel or suspend Certificates of Competence (CoCs).

New Board of Examiners members

Following the last quarterly report update on the retirement of some long serving BoE members, this quarter the replacement members were selected, and the updated BoE formed for their first meeting on 14–15 February.

At the meeting they immediately got on with the work of assessing the existing unit standards and getting ready to recommend the changes required for the existing Safe Work Instrument (SWI).

L to R: Bernie O'Leary, Andrew Weir, Fiona Bartier, Ed Ayre, Paul Hunt, Mark Pizey, Tim Kennedy, Liz MacKenzie, Mathew Vandy, Andy Allen

FIGURE 3: Current Board of Examiners Members

Absent:
Brian Bouzaid

The changes required to the SWI this year are to include unit standards that were unavailable at the time the first SWI was posted. The proposed changes will be consulted with industry prior to being confirmed and will hopefully be posted before the end of the year.

The BoE has had to adjust the oral exam scenarios to be ready for the changed A- and B-grade quarry manager duties, and to have scenarios available for the new CoCs: A- and B-grade metalliferous mine manager, A- and B-grade alluvial mine manager, and the gas monitor CoCs.

The BoE also explained how additional competency requirements can be obtained for the relevant CoCs. (The additional competency requirements have been referred to as 'endorsements' by some).

Additional competencies can be issued for the following:

- Explosives for A- and B-grade opencast, A- and B-grade quarry, A- and B-grade alluvial, A- and B-grade tunnel – Requires Unit Standards 17694, 21152
- Coal for Ventilation Officer – Requires Unit Standards 7145, 21280
- Underground for Mine Surveyor – Requires Unit Standards 7146, 15666, 17741.

You may apply for recognition of the additional or alternate competencies in two ways:

1. You can choose to have the questions included in an examination for the full relevant CoC or
2. You can choose to be examined separately on just on the additional or alternate competencies.

The Board advises that in general you can expect two scenario-based questions that cover the additional or alternate prescribed competency. The BoE has updated the available scenarios to ensure there are suitable questions available for the oral exam processes. The secretariat will provide these scenarios to panels.

The BoE secretariat will advise panel members on the day of examinations what applicants have requested regarding additional competencies.

Table 1 provides a summary of oral exams conducted during the quarter.

TOTAL NUMBER OF ORAL EXAMS HELD Q2 OCT–DEC 23	TOTAL PASSES	SUCCESS %
24	17	70.83

TABLE 1: Oral exams conducted

Table 2 provides a summary of all CoCs issued during the quarter and the current number of CoCs in circulation at the end of Q2 2023/24.
Note: We no longer report Life Time CoCs.

COC TYPE	TOTAL COCs RENEWED Q2 Oct–Dec 2023	TOTAL NEW COCs ISSUED Q2 Oct–Dec 2023	TOTAL NUMBER OF CURRENT COCs
A Grade Quarry Manager	12	3	287
B Grade Quarry Manager	9	12	427
A Grade Opencast Coal Mine Manager	1	0	61
B Grade Opencast Coal Mine Manager	0	0	54
A Grade Tunnel Manager	0	0	38
B Grade Tunnel Manager	1	0	81
Site Senior Executive	1	1	54
First Class Coal Mine Manager	0	0	15
First Class Mine Manager	0	1	22
Coal Mine Deputy	0	0	31
Coal Mine Underviewer	1	0	22
Mechanical Superintendent	0	0	23
Electrical Superintendent	2	0	22
Ventilation Officer	0	0	4
Mine Surveyor	0	0	12
Site Specific	0	0	5
Winding Engine Driver	0	0	0
Total	**27**	**17**	**1,158**

TABLE 2: Certificates of Competence issued and in circulation

2.0 Health and safety performance

IN THIS SECTION:

2.1 Notifiable events

For all extractive operations, notifiable events are required to be reported to WorkSafe under S23(1), S24(1) and S25(1) of the Act, and under Schedule 5 of the Regulations. Notifiable events include any notifiable incidents, notifiable injuries or illnesses, or fatalities.

The tables below show the number of notifiable events and the number of operations that notified events for the previous four years and for Q1 and Q2 of 2023/24 for mines and tunnels (Table 3) and quarries and alluvial mines (Table 4).

MINES AND TUNNELS	2019/20 QUARTERLY AVERAGE	2020/21 QUARTERLY AVERAGE	2021/22 QUARTERLY AVERAGE	2022/23 QUARTERLY AVERAGE	2023/24 Q1	2023/24 Q2
Number of notifiable events	20	18	20	21	23	17
Number of operations that notified events	11	9	11	10	9	8

TABLE 3: Mines and tunnels – notifiable events and operations that notified events

QUARRIES AND ALLUVIAL MINES	2019/20 QUARTERLY AVERAGE	2020/21 QUARTERLY AVERAGE	2021/22 QUARTERLY AVERAGE	2022/23 QUARTERLY AVERAGE	2023/24 Q1	2023/24 Q2
Number of notifiable events	18	16	14	17	14	20
Number of operations that notified events	15	12	13	15	14	19

TABLE 4: Quarries and alluvial mines – notifiable events and operations that notified events

Figure 4 shows the number of notifiable events reported to WorkSafe by sector from January 2022 to December 2023.

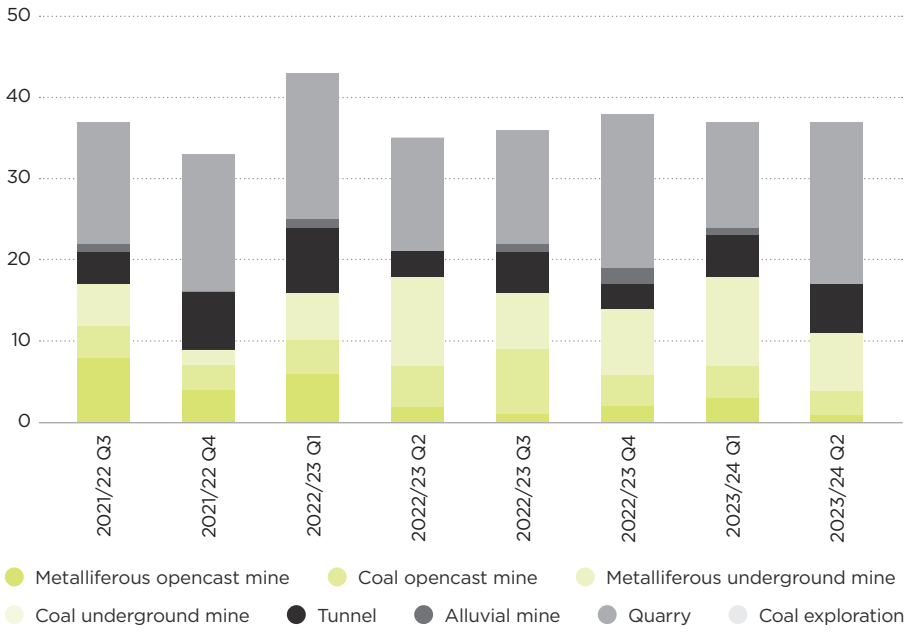

FIGURE 4: Notifiable events by sector

2.2 Injuries

Additional information about injuries is reported to WorkSafe in the form of Quarterly Reports and Records of Notifiable Events under Schedules 6 and 8 of the Regulations. This was the fifth quarter that quarrying operations and alluvial mining operations were required to submit quarterly reports to WorkSafe.

Figure 5 shows the number of injuries by injury type reported to WorkSafe from January 2021 to December 2023. The graph also shows the rolling 12-month average for the Total Recordable Injury Frequency Rate (TRIFR), the rate of recordable injuries that occurred per million hours worked. The current rolling 12-month average TRIFR is 3.4. Rates have fluctuated over past two years without any clear trend.

While TRIFR is not the only measure indicating the health of the industry, it is a useful indicator of how workers are being injured and should be interpreted in conjunction with other data such as notifiable event information.

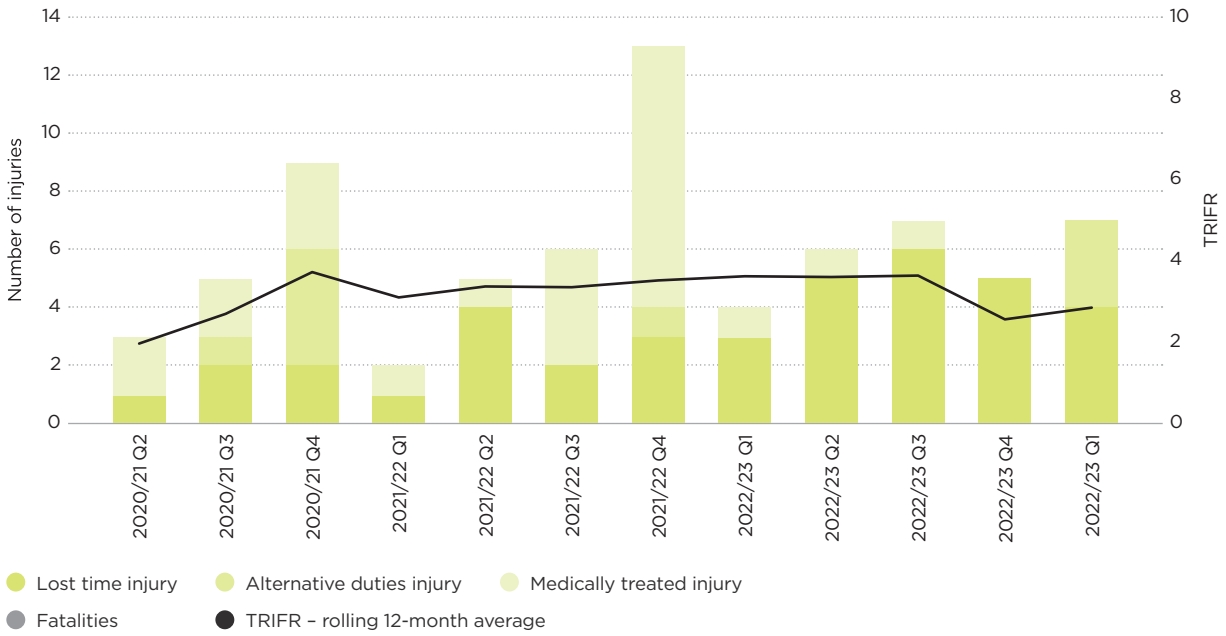

FIGURE 5: TRIFR

The following injury definitions are taken from Schedule 8 of the Regulations:

- **Lost-time injuries** are events that involved injury or illness of a mine worker that resulted in the inability of the worker to work for one day or more (not including the day of the event) during the reporting period (whether the worker is rostered on that day or not).
- **Alternative duties injuries** are events that involved injury or illness of a mine worker that resulted in the worker being on alternative duties during the reporting period.
- **Medical treatment injuries** are work-related injuries to mine workers that required medical treatment during the reporting period but did not require a day lost from work or alternative duties (other than the day of the event).

Figures 6 and 7 show the number of injuries resulting in more than a week away from work (WAFW), and the sum of the claims costs for those WAFW injuries for the mining and quarrying sectors from April 2021 to August 2023. It is important to note that the number of WAFW injuries for previous quarters may increase over time as ACC can grant claims up to 12 months after an injury has occurred. The claims costs for WAFW injuries for previous quarters will also continue to increase over time as the true costs of those injuries are realised. It may take two years or more for the true costs to be realised. The average cost of extractives sector WAFW injuries between April 2021 to August 2023 was over $20,474 per injury.

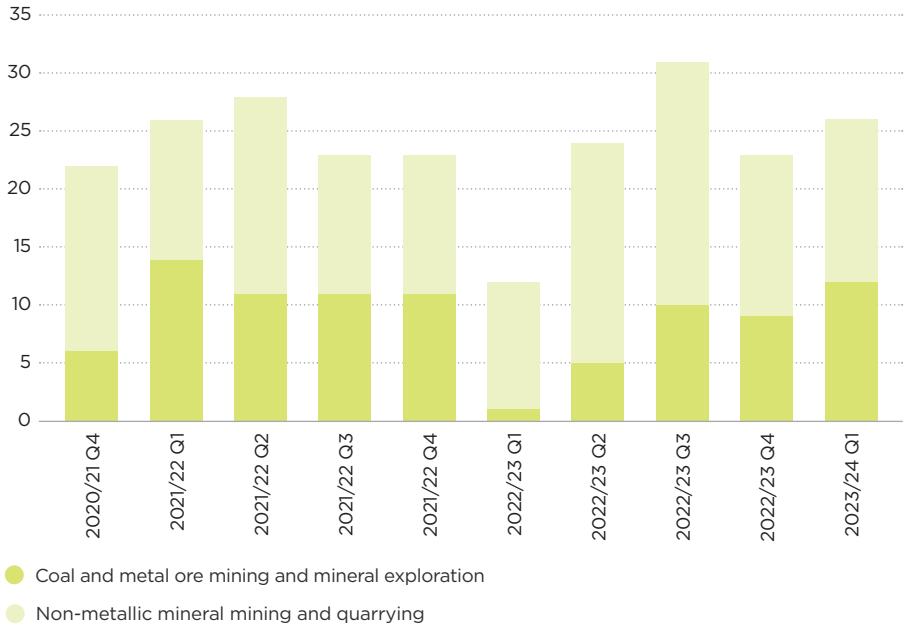

FIGURE 6:
Number of injuries resulting in more than a week away from work

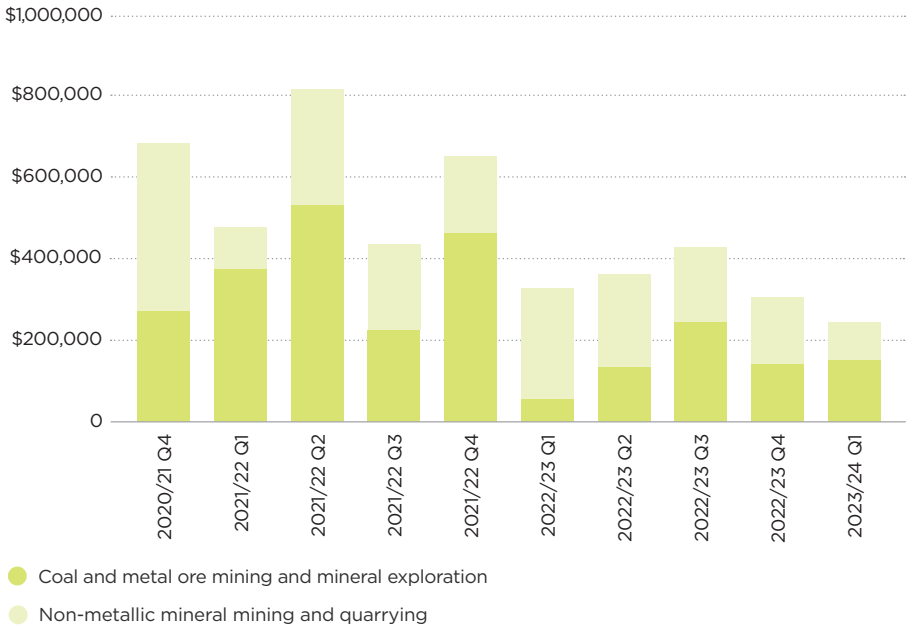

FIGURE 7:
Sum of claims cost (excluding GST) for injuries resulting in more than a week away from work

The data for these graphs comes from our System for Work-related Injury Forecasting and Targeting (SWIFT) database. It includes ACC data on approved work-related injury claims that resulted in more than a week away from work (WAFW). There is an four month lag applied to the data to allow time for the claim information to stabilise, so data for the past quarter is not yet available. While SWIFT data draws on ACC data, differences in counting criteria mean it may not match ACC counts, and should not be considered official ACC data.

2.3 Types of events

Figure 8 shows the notifiable event categories for events notified to WorkSafe in the previous 12 months. The data shows that 42% of notifiable events in the past 12 months have occurred in relation to vehicles and plant (28%), and fire, ignition, explosion or smoke (14%). These two categories are broken down in more detail in the following section. A further 12% of notifiable events in the past 12 months occurred in relation to ground, geotechnical and other structural failures.

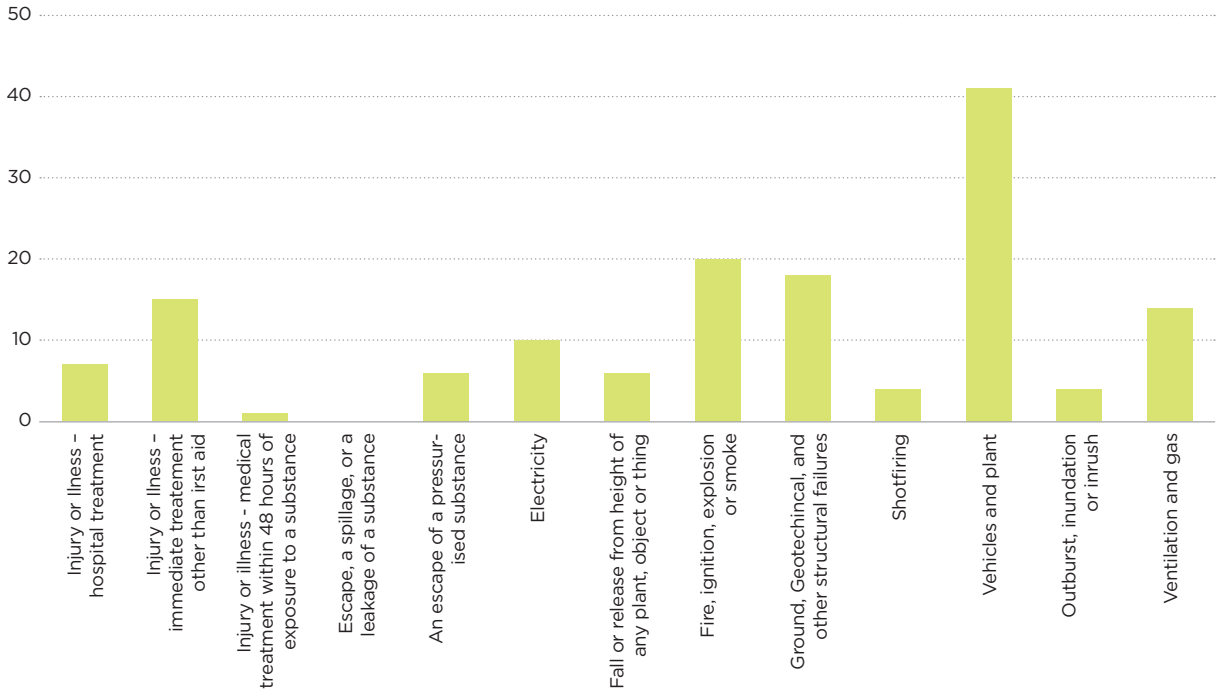

FIGURE 8: Notifiable event categories for the previous 12 months

2.4 Extractives sector focus areas

Where there is a high frequency of notifiable events in any Schedule 5 category, we have broken these events down in more detail to identify key focus areas. We will target our inspections to ensure that operators have adequate controls in place to address these risks.

Figures 9 and 10 break down the two largest notifiable event categories in the past 12 months into the corresponding Schedule 5 sub-categories. The data shows that for notifiable events related to fire, ignition, explosion or smoke, 70% involve fires on plant, mobile plant or in buildings associated with mining or tunnelling activities, 10% involves spontaneous combustion, 5% involves the underground ignition of any gas or dust and 15% involves the outbreak of a fire on the surface or underground. The vehicle and plant-related notifiable events involve collision of mobile plant with other plant (29%), overturning of mobile plant (44%), breach of a safety berm or windrow (10%), and unintended movement or brake failure (17%).

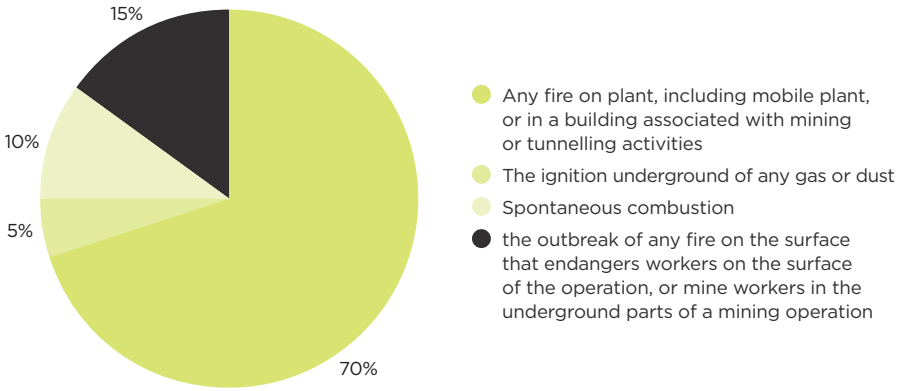

FIGURE 9: Fire, ignition, explosion or smoke-related notifiable event sub-categories

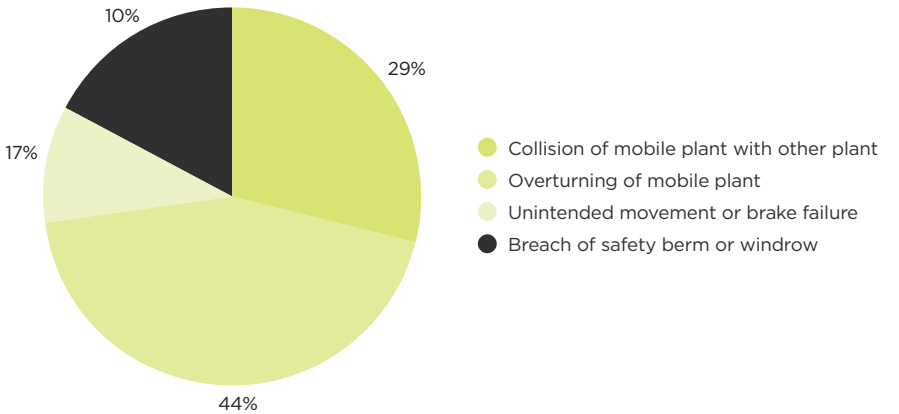

FIGURE 10: Vehicles and plant-related notifiable event sub-categories

Consistency of reporting

Mining and tunneling data are received from a high proportion of those operations and are considered to be accurate. Notifiable events were reported by 22% of operations in the past quarter, and quarterly reports were submitted by 100% of operations this quarter.

Quarrying and alluvial mining data are received from a much lower proportion of those operations and are likely to be less accurate. Notifiable events were reported by just 1.7% of operations in the past quarter. The SWIFT data on WAFW injuries consistently shows higher numbers of injuries in the quarry sector, suggesting under-reporting of events. More accurate reporting from the quarry sector is expected when the requirements for reporting under Schedules 5 and 8 are implemented for quarries.

This was the fifth quarter that quarrying operations and alluvial mining operations were required to submit quarterly reports to WorkSafe. Quarterly reports were provided by 16 active alluvial mining operations (22%) and 227 active quarries (23%).

2.5 Regulator comments

Last quarter we explained how a normal inspection is undertaken to better prepare the operators, especially the smaller operators who had not been inspected recently and were unsure about what to expect.

This quarter the topic is still inspections, but what high risk A-grade quarrying and alluvial mining operations can expect when we conduct a Regulatory Compliance Assessment (RCA) at their operation.

The purpose of a RCA is to:

- assess how well the relevant operator has developed systems to comply with the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016, commensurate with the nature, size and complexity and risks associated with the operation
- determine the extent of compliance with the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016
- identify issues and gaps in compliance and secure improvements, or arrange further assessments where required
- promote good practice.

We expect that many sites would have already gone through a similar assessment or gap analysis process when the regulations were amended, to assist them with updating their systems to comply.

Prior notice of the date of the RCA will be given to operators to allow both the operator and WorkSafe adequate time for preparation.

WorkSafe will request that the operator provide, in advance, a copy of:

- the health and safety management system (HSMS), and
- where relevant - one of the site's principal hazard management plans (PHMPs).

Inspectors will review these documents vs the requirements of the regulations before the onsite RCA to facilitate a quicker on-site assessment process.

We will provide a copy of the Regulatory Compliance Assessment Tool to the operator and request that they self-assess their compliance using the tool and gather evidence of compliance to show to inspectors prior to the assessment date. This will also speed up the on-site assessment process.

For example:

Regulation 120: Operation of mobile plant by authorised mine workers only

The relevant operator must ensure that no mobile plant is operated at the operation except by a competent person who is authorised in writing by the relevant operator to do so.

Inspectors would expect to see that the HSMS states that this is a requirement, and that it is clear about what training and competency requirements the worker must have met to be authorized. Inspectors would then need to sight examples of authorisation in writing for a mobile plant operator as evidence of compliance.

The on-site assessment is expected to take one day and should be attended by the appointed Manager. If there is a worker who can assist with navigating computer systems/records/files, for example, health and safety advisor, then their attendance is also recommended. WorkSafe also welcomes the attendance of any site health and safety representatives.

The inspectors will go through the Regulatory Compliance Assessment Tool with the operator, determining the level of compliance with each Regulation and seeking evidence to support compliance. Inspectors will not retain copies of the evidence provided during the assessment; they will note that evidence has been sighted.

Compliance for each regulation will be assessed as:

- full compliance
- partial compliance/improved documentation required/related issue identified
- not compliant/significant improvement required
- not applicable .

Once the on-site assessment has been completed, the inspectors will provide a summary of the findings or emerging findings to the operator. Where the inspectors determine that specific follow-up action is warranted, they will outline the nature of that action (for example, improvement notice, directive etc) and an approximate timescale over which corrective actions need to be taken.

Following the on-site assessment, a Record Entry will be issued documenting the findings of the Regulatory Compliance Assessment and actions required. Follow up on any enforcement action issued will be done as usual.

2.6 High potential incidents

A high potential incident at a mine, quarry or tunnel is an event, or a series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person.

High potential incidents – 2023/24 Q2

Table 5 provides a summary of high potential incidents notified to WorkSafe in Q2 2023/24. The summaries are an abridged version from the operator's notification report.

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Oct 23	The injured person was relocating a de-watering pump (Diesel). The discharge line has had water in it under pressure, when the IP went to disconnect it has hit him in the head, around his forehead putting a cut in his head.	– Job planning – Isolation – Release of pressure – Risk assessment – Supervision – Training
Oct 23	Driver was discharging a load of gypsum and was at full extension when the trailer started to tip sideways. Trailer was damaged no injury to anyone.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Oct 23	A subcontractors 40t Moxy backed up to close to a 50t excavator in doing so came into direct contact with the counterweight of the 50t excavator which resulted in minor damage to both plants. No one was injured as a result of this incident.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Oct 23	Wall slump in the main decline, where loose material has unravelled behind the mesh and shotcrete. The mesh support was still providing some confinement, but it appears there was some undercutting here and loose material has unravelled out from behind the mesh and shotcrete and caused the slump. Note the access and travel way were maintained throughout but the site required rehab and the shift supervisor enacted a plan to carry this out. Safe access past the area still possible.	– Ground or strata instability – Workplace inspection – Risk assessment – Supervision – Training
Oct 23	A Moxy vehicle has come down the quarry hill loaded and appeared to have gained some speed toward the bottom part of the quarry and lost control of the vehicle which has breached the safety berm. Driver has had an x-ray and there is a fracture in the ball joint.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Oct 23	A transport truck driver was onsite collecting a load of product. He was closing his covers on his trailer and slipped and fell onto the ground below. Approximately 2–3m. We have security camera footage of the incident, photo evidence of the location and the vehicle is still onsite. IP was laying on his back after the fall. No one saw the incident, however the loader operator noticed and was at his side around 1.05 minutes after the fall. We phoned 111 and after 10–15 minutes, IP was sitting up and we moved him to the smoko room. He was taken by ambulance to hospital. He had some crazing to his forehead and hands, was showing signs of concussion and complaining of a sore shoulder.	– Job planning – Fall from Height – Risk assessment – Supervision – Training
Oct 23	The loader driver was driving toward the office near the plant when he lost control causing the loader to complete a 180.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Oct 23	A 230V power tool was being used. When a worker went to start the tool using the trigger switch, he felt a tingle.	– Electricity – Job planning – Risk assessment – Supervision – Training
Nov 23	Trailer tipped off a truck, slowly rolled over and on the ground now. Material may have hung up the top of the trailer, leaning on one side causing to rollover. No injury.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Nov 23	The operator of the roller was rolling material on the tiphead and was rolling up and down a slope. As the roller travelled over a soft spot on the slope the machine slid on an angle. As the operator tried to drive out of the soft spot on an angle the machine slid further and overbalanced causing the machine to tip over.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Nov 23	An operator was using the manual controls on a mobile plant, to move the conveyor after it had a blockage from a return roller that got stuck in the tail drum. Whilst trying to free a scraper that got pulled in towards the belt after running it in reverse, he lost his balance at some point during this, and his finger got caught on a running v-belt underneath the encloser he grabbed onto.	– Job planning – Guarding – Maintenance – Risk assessment – Supervision – Training
Nov 23	A worker was asked to clear a blockage from a crusher. When arriving at the crusher, he did not try to clear the blockage from outside the guard rails, but instead went through the guardrails to stand on top of the live crusher to clear the blockage	– Job planning – Risk assessment – Supervision – Training
Nov 23	Wiring to L/H headlight has been rubbing on a hydraulic hose and chaffed wiring. Power supply and earth for the light has rubbed together caused short and ignited.	– Fire or explosion – Electricity
Dec 23	An incident occurred involving a haul truck occurred during the loading process. The dig area featured a slight incline with slickensides in the strata, creating a slippery surface. The haul truck had already positioned itself for loading when, due to the slick conditions, it slid from a stationary position , making contact with the counterweight of an excavator, with the onside corner of its tray.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Dec 23	Had a excavator overturn, a partial collapse of the bench he was on. The local fire brigade took him to Accident and Emergency, he is showing no injuries.	– Roads and vehicle operating areas Risk assessment – Supervision – Training
Dec 23	Operator was attempting to tighten a loose fitting on an accelerant pump on a shotcrete machine when something has caused accelerant to be sprayed into his eyes.	– Job planning – Isolation – Release of pressure – Risk assessment – Supervision – Training
Dec 23	Inside the quarry, on quarry bench where shot was being loaded to crusher. While loading out material from recently blasted muck pile, part of the bench not blast has slumped down coming into contact with a dumper being loaded. No injury.	– Explosives – Risk assessment – Supervision – Training
Dec 23	A 50T Crane was being used to retrieve the TBM from the reception trench following completion of the tunnel drive. The second component of the TBM had been lifted from the shaft and placed on to the transport cradle which was sitting on the truck. Once the TBM had been lowered on to the cradle, the driver of the truck requested that the load be moved slightly so that it was centred on the truck deck. Two chains were re-located from the TBM lifting points on to two of the lifting points on the cradle, the cradle (and TBM) lifted and re-positioned approximately 60mm in to the correct position. One of the chains was released from the cradle, then the crane hook was raised while a single chain was attached in one corner, causing the cradle and TBM to tip. The TBM then rolled out of the cradle, off the truck and came to rest on the ground adjacent to the truck. No one was injured or was adjacent to the TBM when this unplanned movement occurred.	– Job planning – Fall from Height – Lifting – Risk assessment – Supervision – Training

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Dec 23	Diamond driller was operating the rig when a hydraulic hose has split/ burst and sprayed hydraulic oil into the face and eyes of the driller.	Release of pressure Risk assessment Supervision Training
Dec 23	Developing a tunnel towards a known historical void. When last designed cut was fired it has broken into the stope. This cut was designed to be pulled up short, but the pillar remaining has been blasted through.	– Inundation and Inrush – Historic workings – Risk assessment – Supervision – Training
Dec 23	While dumping overburden material from a stripping project, a dump truck reversed onto the previously dumped material, which caused the dump truck tray to overturn.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training

TABLE 5: High potential incidents – 2023/24 Q2

Table 6 and Figure 11 shows the number of high potential incidents per quarter during the last two years for all extractives operations.

QUARTER	Q3 JAN-MAR 2022	Q4 APR-JUN 2022	Q1 JUL-SEP 2022	Q2 OCT-DEC 2022	Q3 JAN-MAR 2023	Q4 APR-JUN 2023	Q1 JUL-SEP 2023	Q2 OCT-DEC 2023	TOTAL PREVIOUS 12 MONTHS
Number of high potential incidents per quarter	28	20	27	22	22	21	24	22	**89**

TABLE 6: High potential incidents per quarter

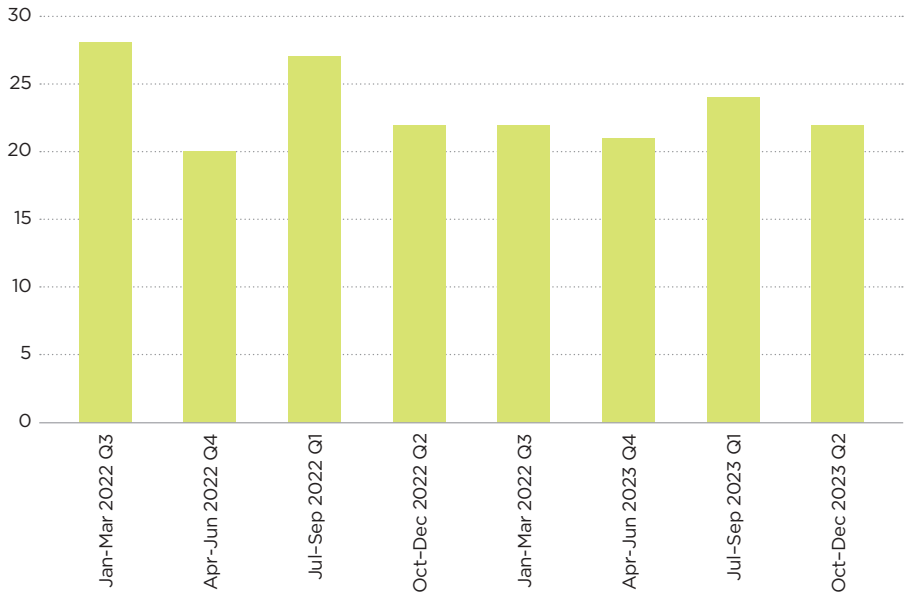

FIGURE 11: High potential incidents per quarter

2.7 High potential incidents – investigation outcomes

High potential incident case study – fall from height during load covering

Oct 23	A transport truck driver was onsite collecting a load of product. He was closing his covers on his trailer and slipped and fell onto the ground below. Approximately 2–3m. We have security camera footage of the incident, photo evidence of the location and the vehicle is still onsite. IP was laying on his back after the fall. No one saw the incident, however the loader operator noticed and was at his side around 1.05mins after the fall. We phoned 111 and after 10–15 minutes, IP was sitting up and we moved him to the Smoko Room. He was taken by ambulance to hospital. He had some crazing to his forehead and hands, was showing signs of concussion and complaining of a sore shoulder.

TABLE 7: High potential incident – investigation outcomes case study

Workers can be exposed to risks to their health and safety while securing and covering loads on vehicles. Businesses who have workers securing and covering loads on their vehicles, or at their worksite, must work together to manage these risks.

THE INCIDENT

A transport truck driver was collecting a load from a quarry operation. The truck was not fitted with an automated tarping system, so the truck driver climbed up to fit the load cover. They slipped and fell to the ground, approximately 2–3m. The truck driver landed on their back. They were taken by ambulance to hospital. Injuries sustained were grazing on forehead and hands, signs of concussion and a sore shoulder.

THE INVESTIGATION IDENTIFIED

- The extractives operator believed the truck company is responsible for the equipment involved.
- The truck driver is a qualified class 5 HT and has been assessed as competent.
- The operator has made it mandatory for all vehicles to have no risk of a fall from height.

REGULATOR COMMENTS AND RECOMMENDATIONS

- Automated tarping cover is a reasonably practicable step to avoid workers climbing up to cover loads. Extractive operators are responsible for all persons on site including visiting truck drivers (Overlapping duties).
- It is recommended to require trucks to have an automated tarping system and this should be discussed when inducting contractors to site.

If trucks are not fitted with automated tarping system:

- extractives operators need to provide a safe platform for truck drivers when trucks are not fitted with automated tarps to safely access the vehicle deck/load when covering loads
- a work area that is flat and level
- consider the effects of wind at site by selecting a sheltered area to minimise the effects of wind on tarps and curtain sides
- establish an exclusion zone so truck drivers can safely move around the vehicle. Use hard barriers such as concrete blocks or bunds and signage for entry and exit.

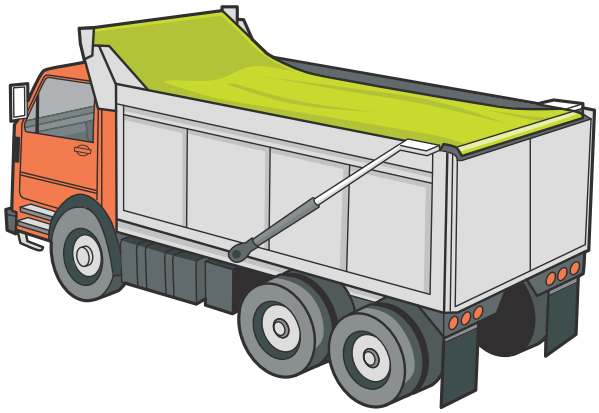

FIGURE 12:
Truck with automated tarping cover

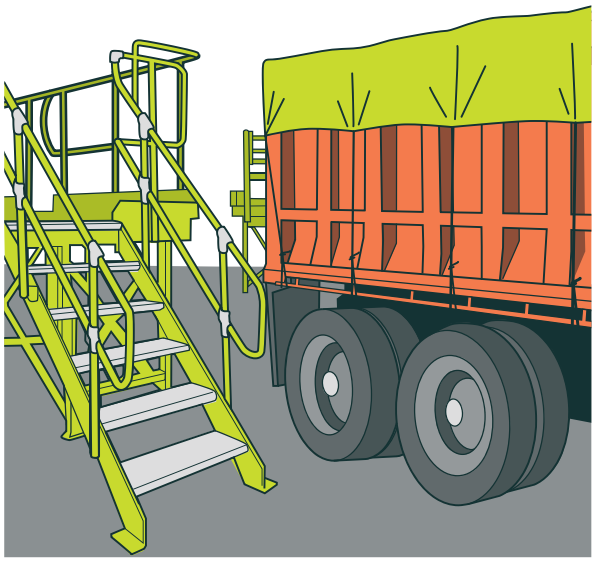

FIGURE 13:
Access platform

3.0 Regulatory insights

IN THIS SECTION:

3.1 I'm an A-grade operation – now what?

What is an A-grade operation?

A-grade quarrying operation means a quarrying operation that has more than four quarry workers who:

a. are involved with:
   i. extracting any material, other than coal or any mineral, from the earth, or
   ii. processing any material, other than coal or any mineral, at the place where the material is extracted, but

b. are not:
   i. the quarry manager appointed under regulation 14, and
   ii. any worker at the quarrying operation who is not involved in extracting or processing any material from the earth (for example, an office worker).

A-grade alluvial mining operation means an alluvial mining operation at which the alluvial mine manager is required by regulation 22 to hold a certificate of competence as an A-grade alluvial mine manager.

That is, an alluvial mining operation in which more than four alluvial mine workers ordinarily work.

Alluvial mine worker:

a. means an above-ground worker who is involved with:
   i. extracting gold from river deposits of sand or gravel, or
   ii. extracting ironsand from sand or gravel, or
   iii. processing material (at the place where it is extracted):
      A. to extract gold from river deposits of sand or gravel, or
      B. to extract ironsand from sand or gravel, but
         b. does not include:
   i. a worker (for example, an office worker) who works at the alluvial mining operation, but who is not involved with extracting gold or ironsand, or processing gold or ironsand; or
   ii. the manager appointed under regulation 15.

What are the requirements for A-grade operations?

Since 18 July 2023, under Regulation 66 the operator of an A Grade operation must:

a. carry out an appraisal of the operation to identify principal hazards at the operation; and

b. ensure that there is a principal hazard management plan for each principal hazard identified.

What is a principal hazard?

Any hazard arising at the operation that could create a risk of multiple fatalities in a single accident, or that could create a risk of multiple people being exposed to potentially fatal health risks in relation to any of the following:

- ground or strata instability
- roads and other vehicle operating areas
- explosives, and
- any other hazard at the operation that has been identified as a hazard that could create a risk of multiple fatalities in a single accident, or that could create a risk of multiple people being exposed to potentially fatal health risks.

Any operation where explosives are used must have a principal hazard management plan for explosives.

During the risk appraisal, consider the specific activities that occur at your operation. Are there activities where multiple fatalities could foreseeably happen in a single accident?

For example, is there routine heavy and light vehicle interaction on your site? Does more than one person often travel in a light vehicle? If there were two people in a LV and they collided with a haul truck, could this result in a multiple fatality event? If yes, then Roads and other vehicle operating areas is a principal hazard.

Principal control plans (PCPs)

If one or more principal hazards have been identified at a site, then an Emergency Management PCP is required.

If one or more principal hazards have been identified that may have long-term effects on the health of the

workers in the operation then a Worker Health PCP is required.

Priscilla Harris
Acting Deputy Chief Inspector Extractives

4.0
The regulator

IN THIS SECTION:

4.1 Our activities

The Extractives Specialist Health and Safety Inspectors at WorkSafe use a range of interventions to undertake their duties. Inspectors strive to achieve the right mix of education, engagement and where required enforcement. This section of the report includes a summary of the interventions used by the Extractives Inspectors during the quarter.

4.2 Assessments

Proactive assessments aim to prevent incidents, injuries and illness through planned, risk-based interventions. Reactive activities are undertaken in response to reported safety concerns or notifiable events. Assessments can be either site- or desk-based in nature.

For proactive site-based assessments, the objectives of each visit are agreed and the appropriate inspection tool is selected. Targeted assessments and regulatory compliance assessments can take several days on site with a team of inspectors attending. These multi-day inspections may be 'targeted' to assess the controls in place for a particular principal hazard (for example, WorkSafe has been targeting 'roads and other vehicle operating areas' as a result of the high number of notifiable events in this area), or they may involve a more general assessment of 'regulatory compliance'. Site inspections and targeted inspections are generally completed in a one day site visit but can also focus on specific topics.

As well as site-based assessments, the Inspectors spend considerable time undertaking desk-based assessments. Proactive desk-based assessments include the review of Principal Hazard Management Plans (PHMPs), Principal Control Plans (PCPs), mine plans, and high risk activity notifications. Responding to notifiable events and safety concerns may involve a site-based or desk-based assessment, or both.

Table 8 shows the range of assessments undertaken in Q2 2023/24 by sector.

		ASSESSMENTS	MINE	TUNNEL	ALLUVIAL MINE	QUARRY
Proactive	Site-based	Targeted assessments				
		Regulatory compliance assessments				
		Site inspections	13	6	8	48
		Targeted inspections				
	Desk-based	PHMP/PCP review		6		
		Mine plan review	16			
		High risk activity				
Reactive	Site-based	Concerns – inspection		1	2	
		Notifiable events – inspection	4	3		12
	Desk-based	Concerns – desk-based	1			
		Notifiable event – desk-based	7	3		2

TABLE 8: Proactive and reactive site and desk based assessments conducted in Q2 2023/24

Figure 14 shows the number of proactive and reactive site- and desk-based assessments undertaken by the regulator in Q2 2023/24. This quarter 73% of our activities were site-based, and 73% of activities were proactive.

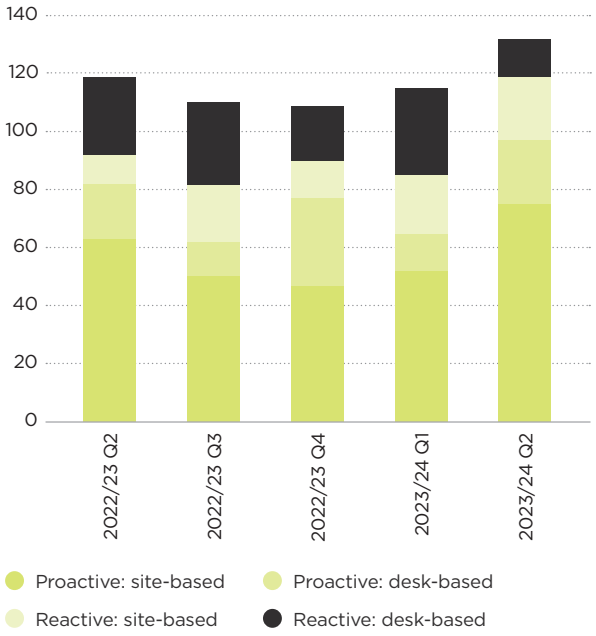

FIGURE 14:
Proactive and reactive site and desk-based assessments

Figure 15 shows the number of assessments undertaken by the regulator in Q2 2023/24 by sector. This quarter, 47% of our assessments were for quarries, 31% for mines, 14% for tunnels and 8% for alluvial mines.

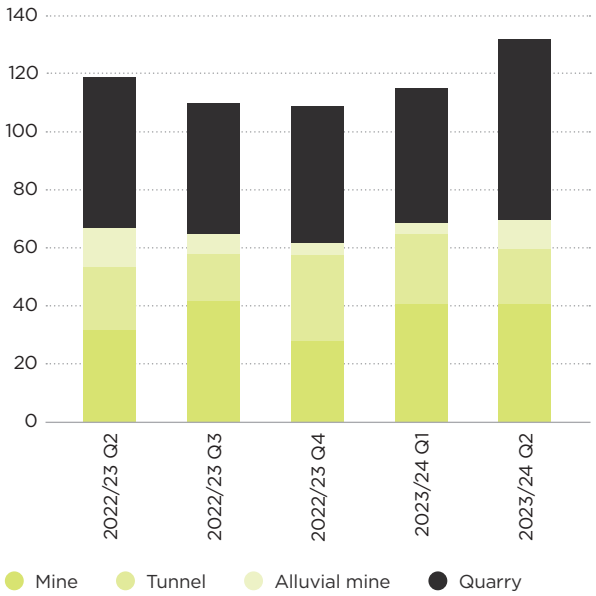

FIGURE 15:
Assessements by sector

4.3 Enforcements

Enforcement actions issued by WorkSafe include prohibition and improvement notices and directive letters. Enforcement actions are issued according to our Enforcement Decision Making (EDM) Model when health and safety issues are identified through assessments.

Figures 16 and 17 show the number of enforcement actions issued in Q2 2023/24 by notice type and by sector. This quarter, a total of 90 enforcement actions were issued. Of those, 4% of were prohibition notices, 33% were improvement notices, 62% were directives and 0% were sustained compliance letters. The majority of the enforcement actions were issued to the alluvial mining (29%), tunnelling (18%) and quarrying (50%) sectors.

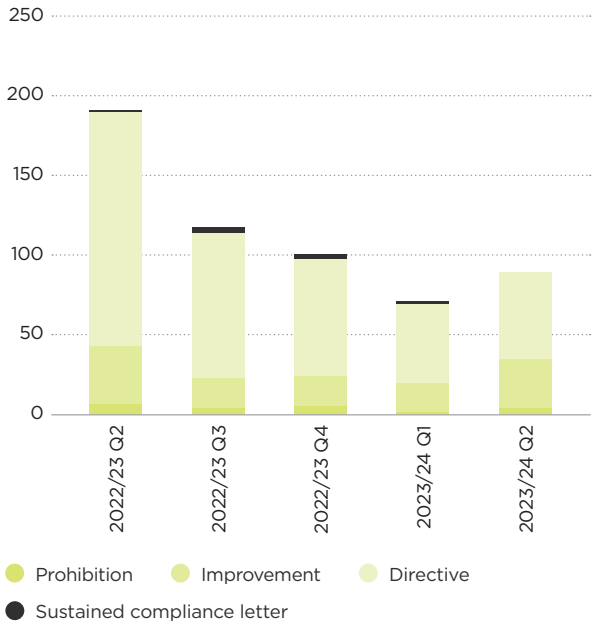

FIGURE 16: Enforcement actions issued by type

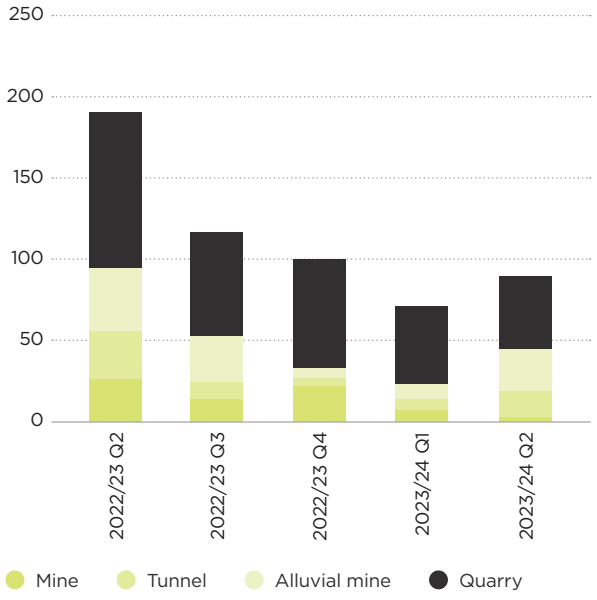

FIGURE 17: Enforcement actions issued by sector

Figure 18 shows the number of enforcement actions issued in Q2 2023/24 by category, and provides an indication of the key areas of concern to our inspectors. This quarter, the majority of enforcement actions were issued for health and safety issues relating to roads and other vehicle operating areas (12%), guarding (23%) and safety critical role/CoC (10%).

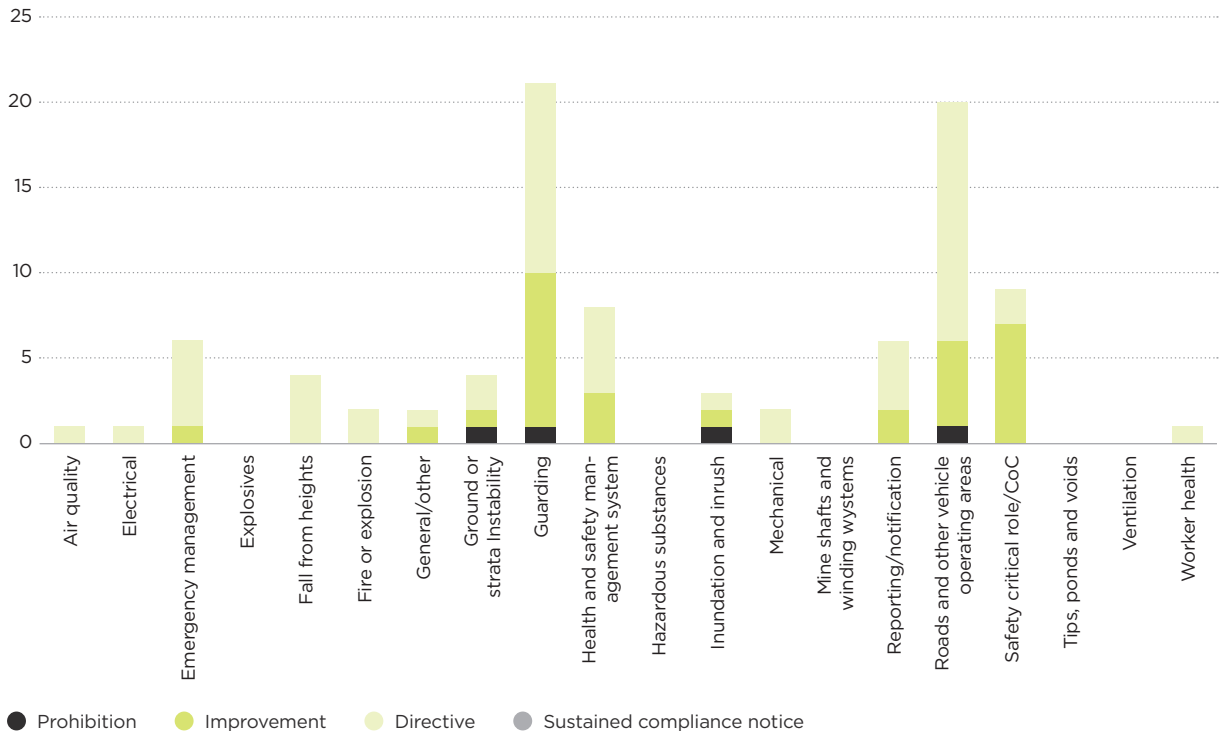

FIGURE 18: Enforcement actions issued by category 2023/24 Q2

Regulator activity comment

The number of inspections undertaken during Quarter 2 increased from the previous quarter, and the Inspectors are now well on track to complete the full schedule for 2023/24. There was a proportionate increase in enforcement action taken.

Last quarter we noted recruitment was underway to recruit two new Quarry Inspectors. This was completed with two inspectors having started and the team now back at full strength.

It is concerning that the highest area of enforcement was basic guarding. The guarding requirements have been in place for a long period of time and all operators should be familiar with them. As an important part of everyday workplace inspections, Managers should be identifying any shortcomings. Unguarded machinery should not be operated. There is no excuse for poor guarding standards at any operation.

It is noted that as a general trend the inspection of ‘mines’ result in significantly less enforcement.

Notes

Disclaimer

WorkSafe New Zealand has made every effort to ensure the information contained in this publication is reliable, but makes no guarantee of its completeness.

It should not be used as a substitute for legislation or legal advice. WorkSafe is not responsible for the results of any action taken on the basis of information in this document, or for any errors or omissions.

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