QUARTERLY REPORT

Extractives industry

2021/22 Q4

April to June

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 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 mining and tunnelling sector 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.

Over the last months our team have been attending industry meetings and visiting operators with the purpose of introducing the changes that have come into effect with the recent implementation of part 1 of the revised regulations. We have been using existing Industry group meetings, such as IOQ branch meetings, to get around as many regions and duty holders as we can. We realise that the most significant change that the regulations introduce is the inclusion of quarries and alluvial mines into the full regulatory regime. For mines and tunnels the changes are relatively minor. Taking this into consideration, our focus has very much been on being accessible to the Quarry and Alluvial sectors. I explained this approach of industry engagement first, in the last quarterly report.

We are now planning our second round of engagements, which will be more detailed workshops. These workshops will focus more on how to comply, rather than just telling you what the regulations say. They will be half-day workshops, and we are planning to do one or two workshops in each of the eight IOQ regions. We are currently finalising the dates with the branches. We encourage anybody who has questions about the new requirements to attend one of these events.

These workshops will be targeted around the issues that we are getting the most feedback or questions about. The first round of engagement has highlighted some grey areas, and we have subsequently considered those issues and tried to reach positions that will be consistent and proportionate. It is likely that at workshops or at site visits we will give targeted guidance back to individuals based on the actual circumstances.

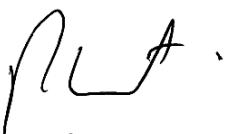
It is important to realise that regulations are written with general intent and try to be as specific as possible, but they can never consider every nuance that might occur. WorkSafe do not own the regulations and we are legally obliged to interpret them and enforce them. Where there is an obvious issue a duty holder could seek an exemption. These are very rare and can be quite arduous to apply for and the criteria for approving an exemption is tight.

Therefore, the more conversations we have during this year about the interpretation of the regulations, the more aligned in understanding the regulator and industry will be for the implementation.

We will discuss specific issues raised in the Regulator Comment section of this quarterly report as they arise but are also currently updating the *Health and safety at opencast mines alluvial mines and quarries* good practice guidelines to align with the revised regulations wording and requirements. This should further assist duty holders with understanding what good compliance would look like.

I strongly recommend to any duty holder that is unclear about what they should be doing at the moment to update their systems and practices to meet the revised regulations to attend one of the workshops or to contact your local inspector and seek advice.

There are adequate timeframes built into the implementation of the regulations, but the bulk of changes are already in effect or will be by July 2023, so time is passing quickly.



Paul Hunt
Chief Inspector Extractives

CONTENTS

tables

figures

1.0 Industry profile

IN THIS SECTION:

1.1 Operations

3

Metalliferous opencast mines
Includes one mine under care and maintenance and one mine under rehabilitation

22

Coal opencast mines
Includes four mines under care and maintenance, and one undertaking rehabilitation

6

Metalliferous underground mines
Includes two mines 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

1

Coal exploration
One notification of drilling commencement in the quarter

62

Alluvial mines
Number of mines that have been verified (53) or have notified of an Appointed Manager to WorkSafe (9) (includes 2 iron sands mines)

943

Quarries
Number of quarries that have been verified (835) or have notified of an Appointed Manager to WorkSafe but not yet verified (108)

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 1,044 active operations in New Zealand as at the end of June 2022.

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.

The numbers of operations will vary from quarter to quarter. In these first quarterly reports, many of the changes are due to verification of sites by our inspectors, rather than actual changes to operations.

1.2 People

723

Metalliferous opencast mines
532 FTEs employed by mine operators and 191 FTEs employed by contractors

722

Coal opencast mines
592 FTEs employed by mine operators and 130 FTEs employed by contractors

436

Metalliferous underground mines
352 FTEs employed by mine operators and 85 FTEs employed by contractors

0

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

1,021

Tunnels
479 FTEs employed by mine operators and 542 FTEs employed by contractors

<1

Coal exploration
2 workers employed by mine operators worked 150hrs and 1 worker employed by contractors worked 20 hours

467

Alluvial mines
Number of workers is known for 30 of the 62 alluvial mines that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 32 operations

2,985

Quarries
Number of workers is known for 742 of the 943 quarries that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 201 operations

There were 6,355 Extractives FTEs in New Zealand as at the end of June 2022. 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.

Figure 1 shows the total hours worked by the mining and tunnelling sectors in Q4 2021/22. The hours are separated into Employees and Contractors.

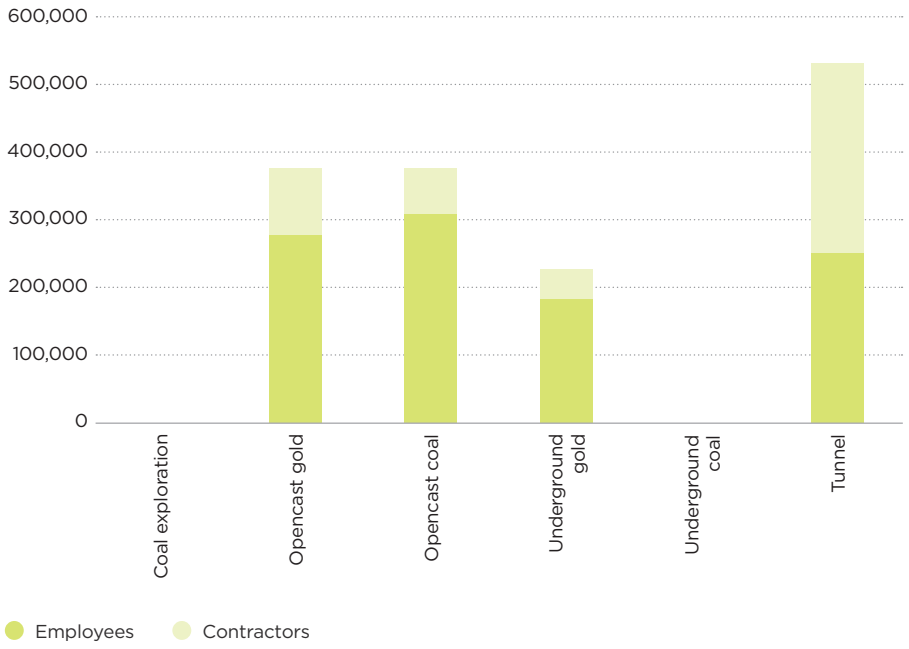


FIGURE 1:
Total hours worked by sector 2021/22 Q4

Figure 2 shows the number of Full Time Equivalents (FTEs) calculated from total hours worked for the mining and tunnelling sectors in Q4 2021/22. The hours are separated into Employees and Contractors.

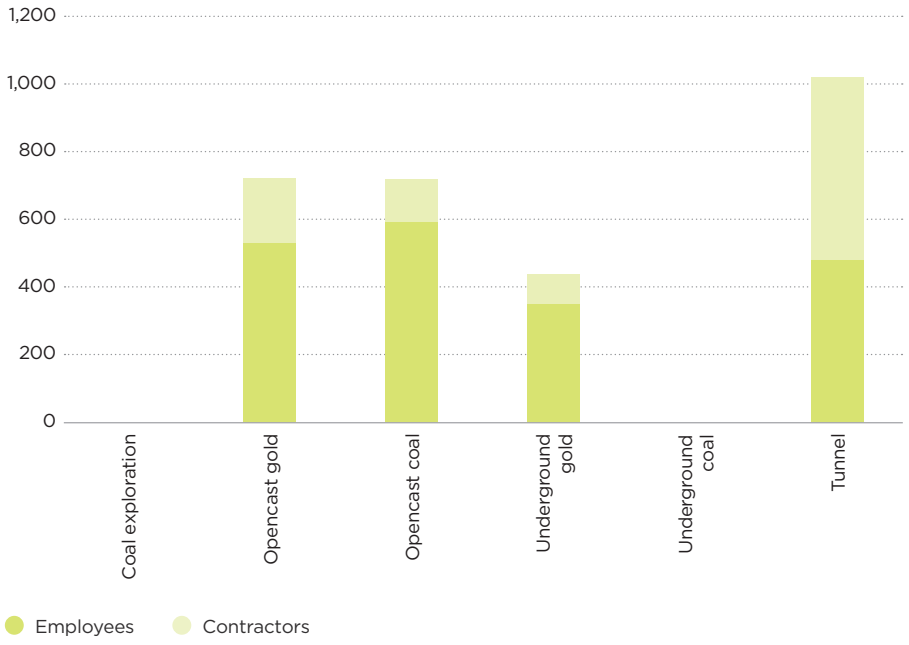


FIGURE 2:
Number of FTEs by sector 2021/22 Q4

1.3 Developing competence

WorkSafe has responsibility for setting the 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).

At this stage the BoE has cleared the renewal and new CoC applications backlogs and has settled into a steady state process for all applicants. This is very much due to the more efficient online video examination process, which has saved considerable time for the BoE Secretariat staff and has made it easier for panel members to be available. We will continue to try and improve the oral exam systems, but in general we believe it is fit for purpose. There have been only occasional quality issues using the online system and they have been addressed on the day.

The BoE is now working on converting the gazette requirements for all the extractives industry CoCs into a Safe Work Instrument. This change was made in the regulation review. What this will require is some consultation with stakeholders about the prescribed requirements, and we are hoping that we can do that in a couple of months. There will be updates to what unit standards are required due to some of the units expiring or becoming less relevant when considering that WorkSafe will also be required to create the new CoCs, such as Metalliferous, Alluvial and the Gas Monitor CoCs. Those with existing CoCs will be unaffected by the changes. The timeframes for consultation will be communicated to the stakeholders when the drafts are available.

And some extractives industry persons may have noted that the annual BoE Board selection process is currently underway. Board members are appointed for terms of two years and must be reselected at the expiry of the term. Sitting and potentially new BoE Board members must apply to be appointed and WorkSafe conducts a selection process to determine who should sit for the next term. The expiry dates for the existing Board members are staggered, so in any year only about four sitting members' terms expire.

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

TOTAL NUMBER OF ORAL EXAMS HELD Q4 APR–JUN 22	TOTAL PASSES	% SUCCESS
35	25	71.4

TABLE 1:
Oral exams conducted

Table 2 provides a summary of all CoC's issued during the quarter and the current number of CoCs in circulation at the end of Q4 2021/22.
Note: We no longer report Life Time CoCs.

COC TYPE	TOTAL COCs RENEWED Q4 Apr-Jun 2022	TOTAL NEW COCs ISSUED Q4 Apr-Jun 2022	TOTAL NUMBER OF CURRENT COCs
A Grade Quarry Manager	16	5	237
B Grade Quarry Manager	12	10	337
A Grade Opencast Coal Mine Manager	2	1	55
B Grade Opencast Coal Mine Manager	1	1	49
A Grade Tunnel Manager	0	2	37
B Grade Tunnel Manager	2	4	73
Site Senior Executive	2	3	52
First Class Coal Mine Manager	1	0	15
First Class Mine Manager	0	0	17
Coal Mine Deputy	1	0	28
Coal Mine Underviewer	0	0	18
Mechanical Superintendent	1	1	22
Electrical Superintendent	0	0	16
Ventilation Officer	0	0	4
Mine Surveyor	0	0	12
Site Specific	0	0	2
Winding Engine Driver	0	0	0
Total	**38**	**18**	**974**

TABLE 2: Certificates of Competence in circulation

2.0 Health and safety performance

IN THIS SECTION:

2.1 Notifiable events

Notifiable events are required to be reported to WorkSafe under S23(1), S24(1) and S25(1) of the Act, and for mining and tunnelling operations, 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 three years and for Q1 to Q4 of 2021/22 for mines and tunnels (Table 3) and quarries and alluvial mines (Table 4).

MINES AND TUNNELS	2018/19 QUARTERLY AVERAGE	2019/20 QUARTERLY AVERAGE	2020/21 QUARTERLY AVERAGE	2021/22 Q1	2021/22 Q2	2021/22 Q3	2021/22 Q4
Number of notifiable events	18	20	18	20	24	21	16
Number of operations that notified events	9	11	9	11	12	12	8

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

Nineteen individual mines and tunnels from a total of 38 reported notifiable events in the past 12 months.

QUARRIES AND ALLUVIAL MINES	2018/19 QUARTERLY AVERAGE	2019/20 QUARTERLY AVERAGE	2020/21 QUARTERLY AVERAGE	2021/22 Q1	2021/22 Q2	2021/22 Q3	2021/22 Q4
Number of notifiable events	14	18	16	10	13	16	17
Number of operations that notified events	13	15	12	9	13	15	15

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

Forty-four individual quarries and alluvial mines from a total of 1,005 reported notifiable events in the past 12 months.

Figure 3 shows the number of notifiable events reported to WorkSafe by sector from July 2020 to June 2022.

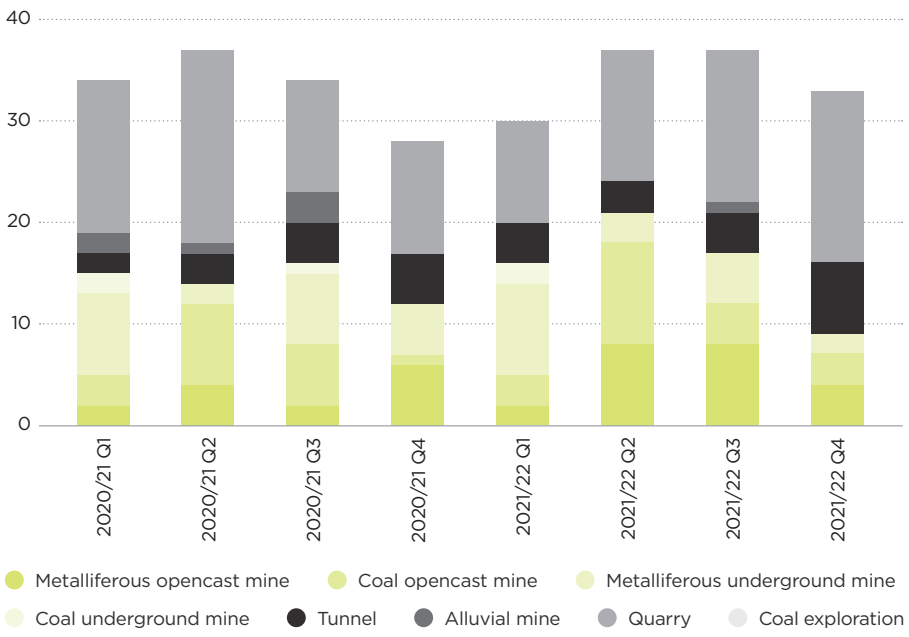


FIGURE 3: Notifiable events by sector

2.2 Injuries

Additional information about injuries is reported to WorkSafe for mining and tunnelling operations in the form of Quarterly Reports and Records of Notifiable Events under Schedules 6 and 8 of the Regulations. Figure 4 shows the number of injuries by injury type reported to WorkSafe by the mining and tunnelling sectors from July 2019 to June 2022. 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 TRIFR is 4.0. 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.

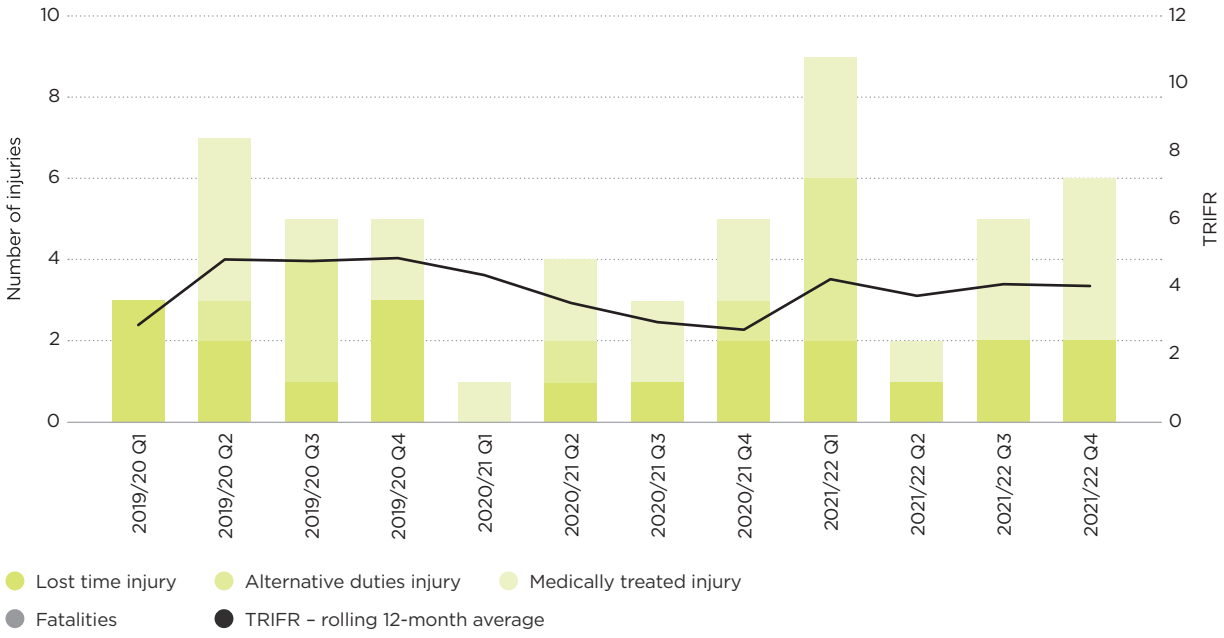


FIGURE 4: TRIFR – mines and tunnels

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 1 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 5 and 6 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 July 2019 to October 2021. 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 July 2019 and October 2021 was over $22,900 per injury.

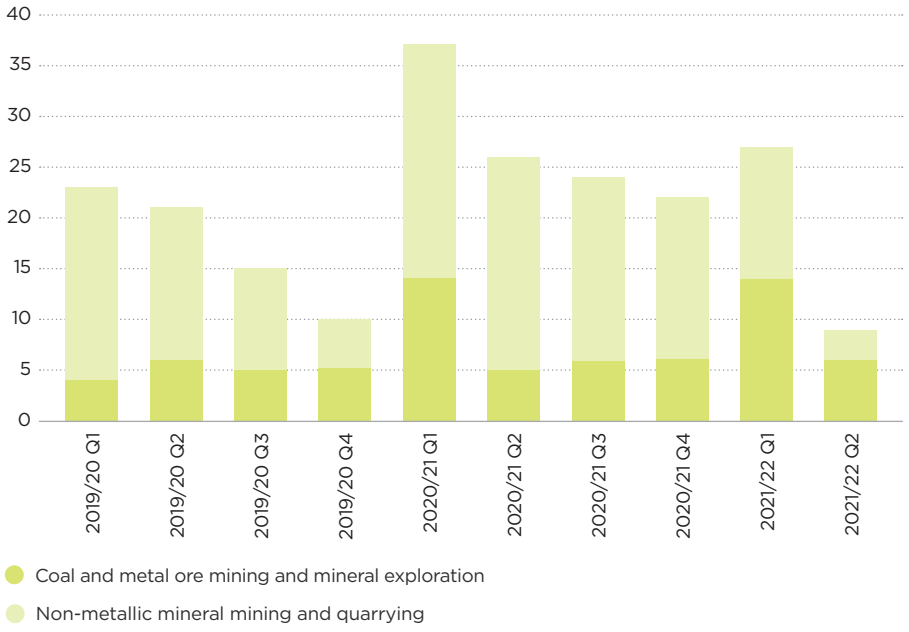


FIGURE 5:
Number of injuries resulting in more than a week away from work

FIGURE 6:
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 eight month lag applied to the data to allow time for the claim information to stabilise, so data for the past two quarters 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

Figures 7 and 8 show the notifiable event categories for events notified to WorkSafe in the previous 12 months, by the mining and tunnelling sectors and the quarrying and alluvial mining sectors, respectively. The data shows that 51% of notifiable events in the mining and tunnelling sectors in the past 12 months have occurred in relation to vehicles and plant (24%), and fire, ignition, explosion or smoke (27%). These two categories are broken down in more detail in the following section. Fifty-nine percent of notifiable events in the quarrying and alluvial mining sectors in the past 12 months involved the collapse, overturning, failure or malfunction of, or damage to plant (39%) and an implosion, explosion or fire (20%).

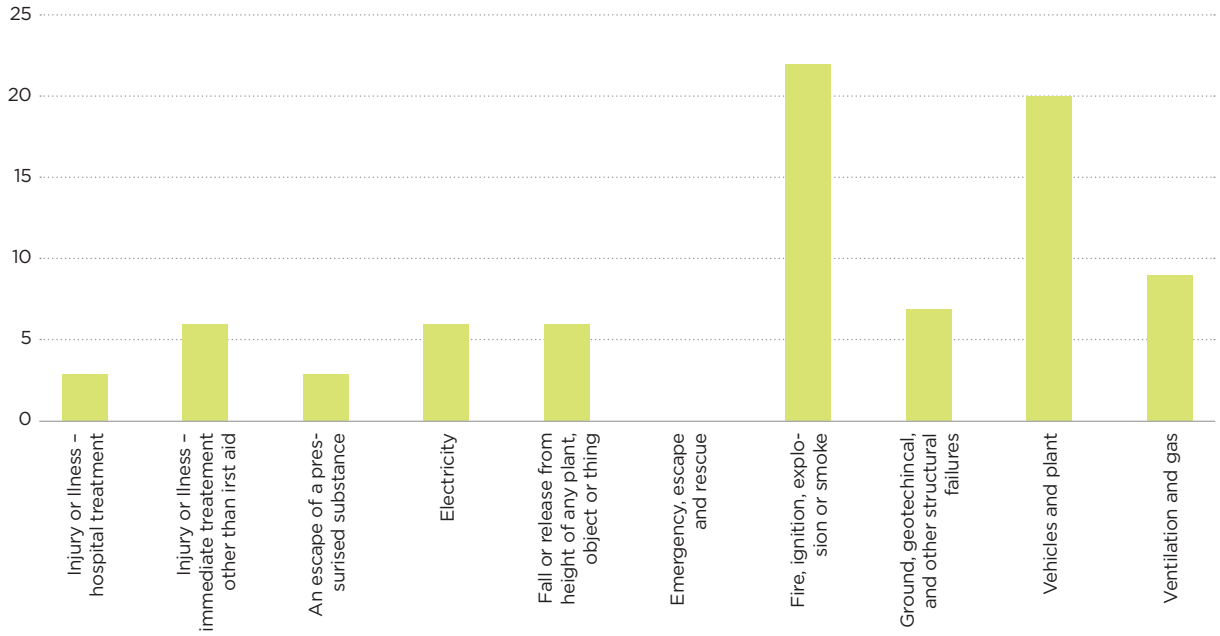


FIGURE 7: Mines and tunnels notifiable event categories for the previous 12 months

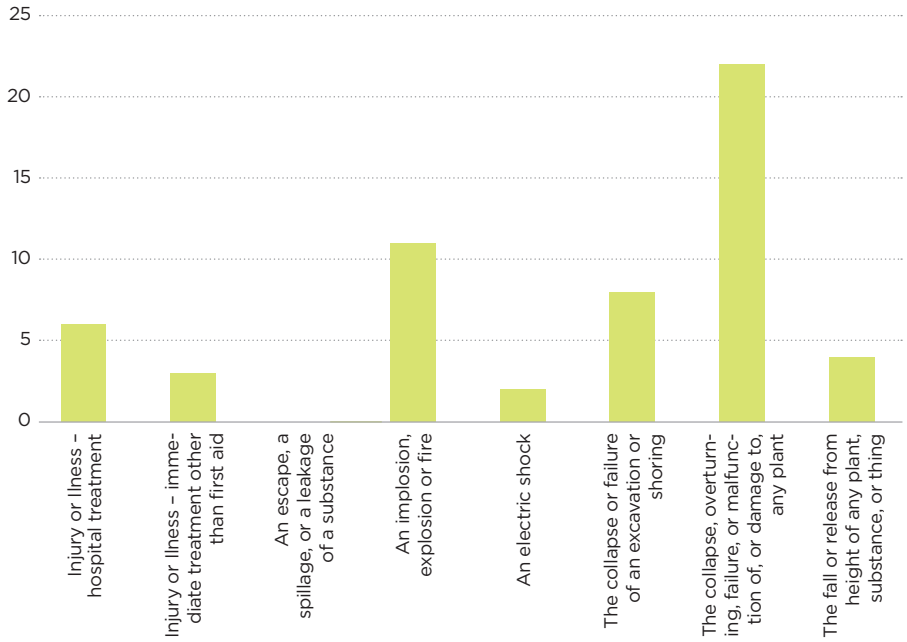


FIGURE 8:
Quarries and alluvial mines notifiable event categories for the previous 12 months

2.4 Mine and tunnel 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 for mines and tunnels 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, 64% involve fires on plant, mobile plant or in buildings associated with mining or tunnelling activities, 9% involves spontaneous combustion, and 27% 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 (30%), overturning of mobile plant (50%), and unintended movement or brake failure (20%).

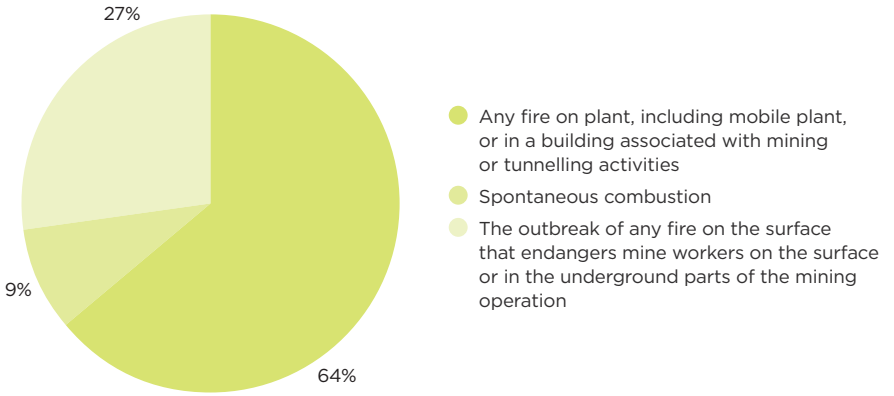


FIGURE 9:
Fire, ignition, explosion or smoke-related notifiable event sub-categories

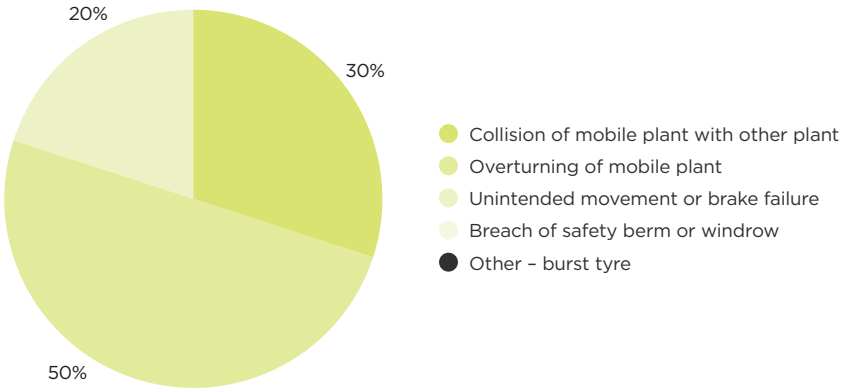


FIGURE 10:
Vehicles and plant-related notifiable event sub-categories

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 50% of operations in the past 12 months, 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 4.3% of operations in the past 12 months. 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.

2.5 Regulator comments

Issues raised post revised regulation implementation

DEFINITION OF A QUARRYING OPERATION

Knowing what regulations apply to you is important and starts with an understanding of how legislation defines your particular activity and status. Important definitions for the Extractives sector can be found in Schedule 3 of the Health and Safety at Work Act 2015. At recent industry workshops, many quarry operators have been surprised to learn that the definition of a quarrying operation is different than they thought.

The definitions spell out what is included and what is not, and they are generally more encompassing than many people realise. For instance, coal mining extends from the exploration phase through to rehabilitation. If any operator is in doubt, they should contact WorkSafe about how definitions are applied in practice. Undertaking an operation without notification of commencement and appointment of safety critical roles would be illegal.

To specifically address one area of confusion identified at the workshops, the definition of a Quarrying Operation is detailed below with key words in orange:

> **3 MEANING OF QUARRYING OPERATION**
>
> 1. In this schedule, **quarrying operation**:
>   a. means an activity carried out above ground for the purpose of:
>   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; and
>   b. includes the place where an activity described in paragraph (a) is carried out; and
>   c. includes any place in which any material extracted or processed in a quarry is crushed or screened.
> 2. Subclause (1) applies whether or not the material is to be extracted or processed for commercial gain and whether or not the material is extracted or processed by the use of explosives.

The confusion seems to be around processing of material after extracting it. WorkSafe view processing to include crushing, screening, and stockpile management, including loading and transport of the material at the site where it is produced, or at another site if it is crushed or screened at a different location.

In the future, this definition may change to exclude off-site processing however until it does, the above definition will be used by WorkSafe.

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 – 2021/22 Q4

Table 5 provides a summary of high potential incidents notified to WorkSafe in Q4 2021/22. The summaries are an abridged version from the operator's notification report.

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Apr 22	ADT was carting slops from the spillway up the haul road to the old workshop area (approximately 2km). Coming out of the spillway required a 2-point turn to drive around the sharp road bend. Part of this 2-point turn required the ADT to reverse for approximately 3–5m down an approximately 1:8 slope before driving up the haul road. As the ADT reversed down slope and the operator braked, the load moved to the rear of the deck causing an offset of gravity and transferring weight off the cab. This transfer of weight and the road crossfall (approximately 5%) caused the truck cab to fall onto its side.	– Roads and vehicle operating areas – Road design – Job planning – Risk assessment – Supervision – Training

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Apr 22	The evidence points to a 750KVA transformer that had a catastrophic failure when a surge caused a flash over inside the cable termination box on the LV side of the transformer. The arc caused the oil tank to rupture, spilling hot transformer oil which caught alight. This then spread to the control room igniting all within. The NZ Fire attended the incident as well as WEL Energy, the supply authority.	– Electrical – Fire or explosion – Equipment maintenance – Emergency management
Apr 22	While pressing a bush into a 777 truck hoist hinge using a porta power the adjustment bolt has broken and projected across the workshop coming to rest in a drill cab that was beside the truck.	– Stored energy – Equipment selection – Job planning – Risk assessment – Supervision – Training
May 22	While pushing a jack under a 777 dump truck to jack it up there was a steel block spacer on top of the jack ram with a weight of 15kg that has fallen onto the mechanic's right finger lacerating the skin in two areas.	– Job planning – Equipment selection – Risk assessment – Supervision – Training
May 22	A loader operator was feeding the primary crusher with river-run whilst another operator loaded a road truck with crusher dust. Thereafter, the truck (and trailer) proceeded to stop at the fixed plant area and used a hose to wet the crusher dust, as the truck did not have a sheeting system. The loader operator feeding the primary crusher did not see the truck behind the loader when coming down the ramp to collect more product. No-one sustained any injuries.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
May 22	Possible misfire: Standard blast procedures were followed, and when doing the immediate post blast walkover, the shot firer saw 3 downlines that were in good order. These were tied in and blasted. After the second detonation, only one line was found with burn lines, the other 2 could not be found. There is a small chance that 2 x 400g boosters may be in the area. The emulsion will become inert by the time the area is dug (3 weeks) and the area is wet. The area has been coned off.	– Explosives – Risk assessment – Supervision – Training
May 22	ADT try roll over.	– Roads and vehicle operating areas – Road design – Job planning – Risk assessment – Supervision – Training
May 22	No Injury. ADT deck overturn.	– Roads and vehicle operating areas – Road design – Job planning – Risk assessment – Supervision – Training
May 22	A group of scaffolders were in the process of dismantling a small section of scaffold that was located above a waler walkway. As a short pipe section was being removed a scaffold clip (approximately 1kg) has become detached from this section and fallen onto the scaffold platform then bounced off the platform falling approximately 12m to the area below. The clip landed next to an employee who was working in this area.	– Fall from height – Job planning – Risk assessment – Supervision – Training
Jun 22	A worker was in the process of removing a section of rebar that was in the way of where an excavator was being used to bucket concrete into an area behind some shuttering. As the excavator swung it contacted another piece of rebar and this has then hit the worker in the lower back causing bruising of the lower back.	– People plant interaction – Exclusion zones – Job planning – Risk assessment – Supervision – Training

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Jun 22	**Note**: There was no injury. Cutterheads discs were being changed on the TBM. A cutterhead disc (approximately 120kg) was attached to a chain block so that it could be moved between the material lock on the TBM machine and the deck on the exterior of the chambers. The disc is attached to the chain block via a threaded eye and when lowering the disc the attachment pulled out resulting in the disc falling approx 0.8m onto the deck and then off the deck down approx 1.8m onto a thrust ram below. No-one was in the fall area other than the operator of the chain block who was off to the side of the lifting area (on some stairs at the deck level).	– Fall from height – Lifting – Job planning – Risk assessment – Supervision – Training
Jun 22	Whilst excavating an area adjacent to the fixed plant to reinstall a failing retaining wall, an unknown live cable was struck with an excavator bucket. The power was instantly tripped.	– Electrical – Job planning – Survey – Risk assessment – Supervision – Training
Jun 22	A load of steel cages that go into reinforced concrete were being lifted by power crane. Got to 15–20m then bottom cage separated from load and dropped to ground. No one in area. No injuries. Scene held. Have stopped using power crane. Looks like a rigging failure in how cages were hooked up.	– Fall from height – Lifting – Job planning – Risk assessment – Supervision – Training
Jun 22	No injuries. Whilst reversing ADT the right back wheel caught the stockpile causing the trailer section of truck to tip on its left side. The cab was intact, just trailer section that tipped over.	– Roads and vehicle operating areas – Job planning – Risk assessment – Supervision – Training
Jun 22	A grader was in workshop to have set of cutting edges changed out. A worker was cleaning RHS door windows. The worker was standing on step ladder to conduct task. They have fallen from the ladder, landing on the concrete workshop floor.	– Fall from height – Equipment selection – Job planning – Risk assessment – Supervision – Training
Jun 22	A truck had a flat P3 tyre underground. In the process of moving the truck to safer location the high speed shaft has come into contact with a brake hose mounted on front diff. The contact was made due to the front axle being on an angle caused by the flat tyre. The high speed shaft rubbed through the hydraulic hose and the heat caused a small flame which was put out immediately using a fire extinguisher. The process of moving the truck was stopped, the truck was made safe and it was barricaded. The truck was inspected by the mechanic following the incident and the damaged hoses made safe to enable moving off the decline. Due to the fact that the truck was completely blocking the decline and creating a potential safety hazard I instructed the team to move it to a safe location to complete investigation and change the tyre.	– Fire or Explosion – Job planning – Risk assessment – Supervision – Training
Jun 22	Rear bin of Articulated Dump Truck tipped over when unloading at tip stockpile area. The operators cab remained upright during the incident.	– Roads and vehicle operating areas – Job planning – Risk assessment – Supervision – Training
Jun 22	No injury. A HV cable failed when energised. On investigation an arcing was found to have occurred within the cable coupler.	– Electrical – Fire or explosion

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Jun 22	No injuries. 2x Pentax boosters unaccounted for after blasting. Stock taken before booking out boosters all books balancing. After taking boosters for blasting and balancing the books it seemed that 2 boosters are missing. The site was checked again, check all rubbish bags, recount product, check shot logs, begin investigating by making inquiries with all staff. Unexplained event.	– Explosives – Supervision – Training
Jun 22	A shotcrete rig was being moved out of the cross passage. During this process the boom has been slewed and pinched the trailing cable against a lifting bracket. As per the electrical design the pilot earth system has immediately tripped, removing power to the cable.	– Roads and vehicle operating areas – Electrical – Job planning – Risk assessment – Supervision – Training

TABLE 5: High potential incidents – 2021/22 Q4

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

QUARTER	Q1 JUL-SEP 2020	Q2 OCT-DEC 2020	Q3 JAN-MAR 2021	Q4 APR-JUN 2021	Q1 JUL-SEP 2021	Q2 OCT-DEC 2021	Q3 JAN-MAR 2022	Q4 APR-JUN 2022	TOTAL PREVIOUS 12 MONTHS
Number of high potential incidents per quarter	20	24	23	16	21	23	28	20	**92**

TABLE 6: High potential incidents per quarter

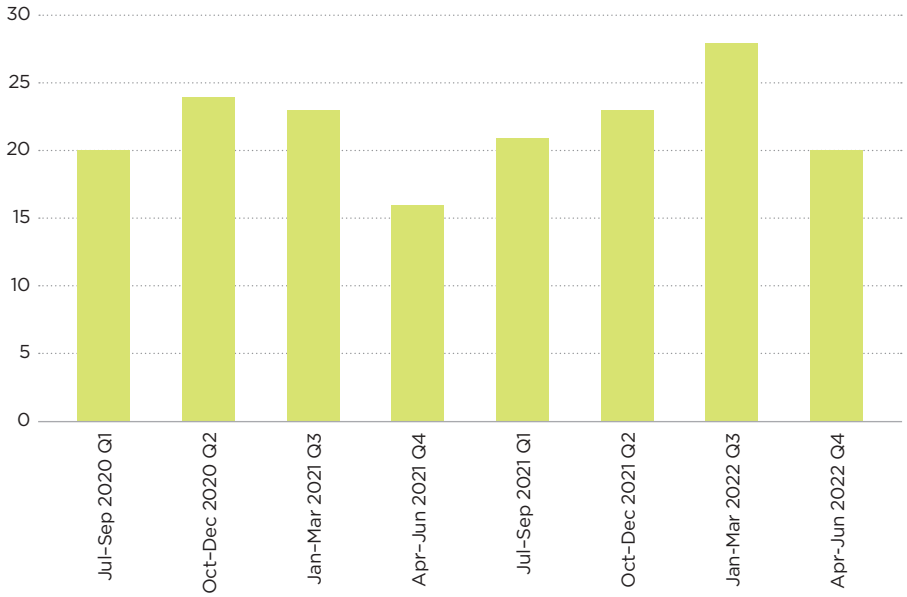


FIGURE 11:
Number of high potential incidents per quarter

2.7 High potential incidents – investigation outcomes

High potential incidents involving fall from height

This quarter, there were a number of high potential incidents involving fall from height reported to WorkSafe.

A key point that should always be considered when planning work at height is that there are two fundamental sets of risks:

1. those to the workers that are working at height
2. those risks to other workers below, or the risks others can cause to those at height.

Work organisation and coordination is critical to ensuring adjacent workstreams are adequately isolated and that the actions of one of the groups doesn't adversely affect the other.

THE INCIDENTS

May 22	A group of scaffolders were in the process of dismantling a small section of scaffold that was located above a waler walkway. As a short pipe section was being removed a scaffold clip (approximately 1kg) has become detached from this section and fallen onto the scaffold platform then bounced off the platform falling approximately 12m to the area below. The clip landed next to an employee who was working in this area.
Jun 22	**Note**: There was no injury. Cutterheads discs were being changed on the TBM. A cutterhead disc (approximately 120kg) was attached to a chain block so that it could be moved between the material lock on the TBM machine and the deck on the exterior of the chambers. The disc is attached to the chain block via a threaded eye and when lowering the disc the attachment pulled out resulting in the disc falling approx 0.8m onto the deck and then off the deck down approximately 1.8m onto a thrust ram below. No one was in the fall area other than the operator of the chain block who was off to the side of the lifting area (on some stairs at the deck level).
Jun 22	A load of steel cages that go into reinforced concrete were being lifted by power crane. Got to 15–20m then bottom cage separated from load and dropped to ground. No one in area. No injuries. Scene held. Have stopped using power crane. Looks like a rigging failure in how cages were hooked up.
Jun 22	A grader was in workshop to have set of cutting edges changed out. A worker was cleaning RHS door windows. The worker was standing on step ladder to conduct task. They have fallen from the ladder, landing on the concrete workshop floor.

TABLE 7: High potential incident – fall from height incidents

REGULATOR COMMENTS AND RECOMMENDATIONS

Working at height

Where the potential of a fall exists, duty holders should consider the following hierarchy of controls:

- Can the job be done without exposing persons to the hazard (eliminate). This can often be achieved at the design, construction planning and tendering stages.
- If elimination is not practicable then steps should be taken to isolate people from the hazard. This can be achieved using safe working platforms, guardrail systems, edge protection, scaffolding, elevated work platforms, mobile scaffolds and barriers to restrict access.
- If neither elimination nor isolation are practicable then steps should be taken to minimise the likelihood of any harm resulting. This means considering the use of work positioning systems or travel restraint systems, safety harnesses, industrial rope access systems and soft landing systems.

PCBUs should:

- change the way a task is carried out when a safer alternative is identified, and encourage their workers accordingly
- ensure suitable equipment, including PPE, is available and workers have adequate training for its use
- ensure workers are trained to identify fall-from-height hazards they might encounter and have appropriate supervision
- review elevated screen plants and conveyor systems to identify all reasonably foreseeable hazards, including specific tasks that expose workers to the risk of falling from height
- conduct a risk assessment to identify hazards and reduce worker exposure, so far as is practicable
- review and, where necessary, update site procedures to ensure controls are adequately documented in the safety management system, including the need for specific risk assessments when working at height.

Mobile screening plant designers, manufacturers, importers and suppliers should conduct a risk assessment of the tasks workers are likely to undertake on the plant to identify where they may be exposed to the identified hazards, including the risk of falling from height.

Fall of plant or equipment from height

Equipment falling from height potentially exposes workers to the hazard of being struck by falling plant and equipment. Fall hazards where plant and equipment can fall from height should be identified in risk assessments, for example, unsecured tools. Establish exclusion zones to protect workers from the potential fall of plant and equipment.

Rigging refers to the use of mechanical load-shifting equipment and associated gear to move, place or secure a load. Lifting loads with rigging predominantly involves working and/or load traversing at height. Risks of workers falling, or suspended loads falling must be considered. Regularly inspect and maintain plant and equipment.

All work should be coordinated to eliminate or isolate the potential for different work activities to impact on other activities. For example, avoid using mobile plant in the vicinity of workers working at height on temporary structures or EWPs. Communicate all risks to all potentially affected workers.

More information

Working at height

Load lifting and rigging

Cranes

AS 1657 Fixed platforms, walkways, stairways and ladders

3.0
The regulator

IN THIS SECTION:

3.1 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.

3.2 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 Q4 2021/22 by sector.

		ASSESSMENTS	MINE	TUNNEL	ALLUVIAL MINE	QUARRY
Preventative	Site-based	Targeted assessments	1			
		Regulatory compliance assessments				
		Site inspections	2	5	5	43
		Targeted inspections	2	2		
	Desk-based	PHMP/PCP review		15		
		Mine plan review	9	5		
		High risk activity	1			
		COVID-19 assessment				
Reactive	Site-based	Concerns – inspection				4
		Notifiable events – inspection	8	2		6
	Desk-based	Concerns – desk-based				3
		Notifiable event – desk-based	12	5		3

TABLE 8: Proactive and reactive site and desk based assessments conducted in Q4 2021/22

Figure 12 shows the number of proactive and reactive site- and desk-based assessments undertaken by the regulator in Q4 2021/22. This quarter 60% of our activities were site-based, and 68% of activities were proactive.

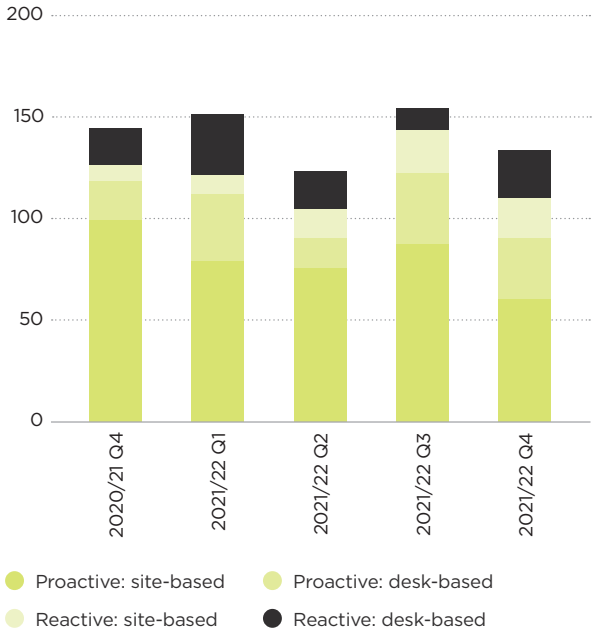


FIGURE 12:
Proactive and reactive site and desk-based assessments

Figure 13 shows the number of assessments undertaken by the regulator in Q4 2021/22 by sector. This quarter, 44% of our assessments were for quarries, 26% for mines, 26% for tunnels and 5% for alluvial mines.

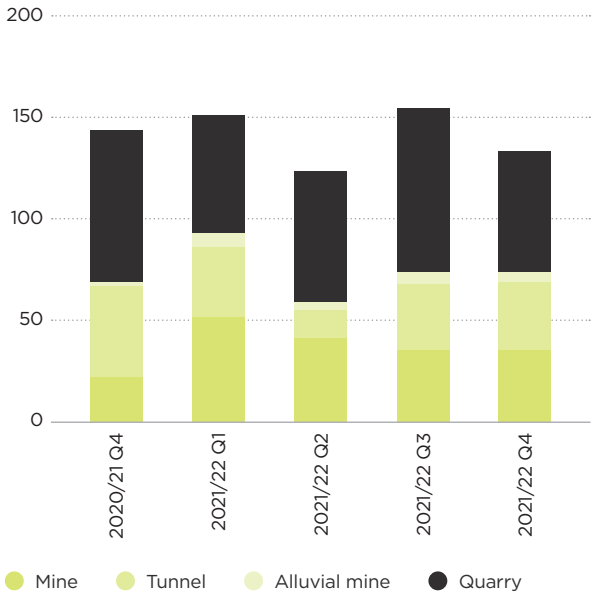


FIGURE 13:
Assessements by sector

3.3 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 14 and 15 show the number of enforcement actions issued in Q4 2021/22 by notice type and by sector. This quarter, a total of 137 enforcement actions were issued. Of those, 1% of were prohibition notices, 19% were improvement notices, 80% were directives and 1% were sustained compliance letters. The majority of the enforcement actions were issued to the mining (20%) and quarrying (57%) sectors.

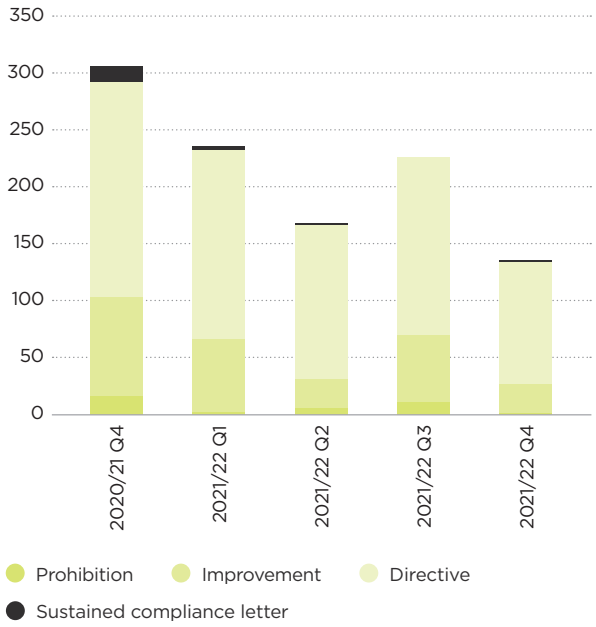


FIGURE 14: Enforcement actions issued by type

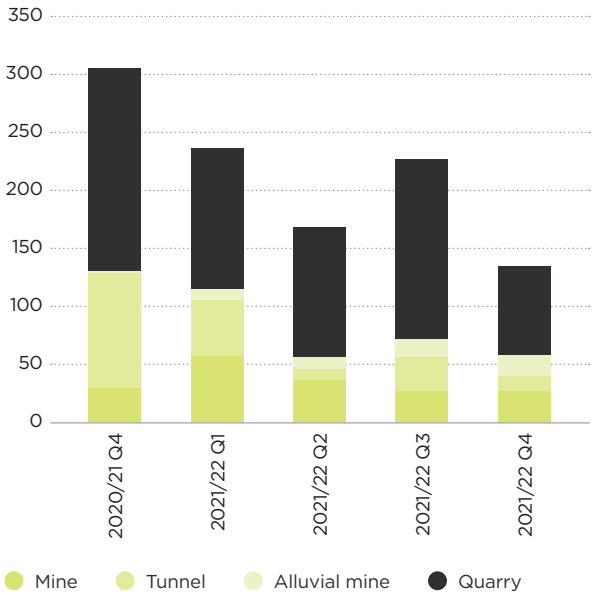


FIGURE 15: Enforcement actions issued by sector

Figure 16 shows the number of enforcement actions issued in Q4 2021/22 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 (23%), guarding (16%) and Health and Safety Management System (12%).

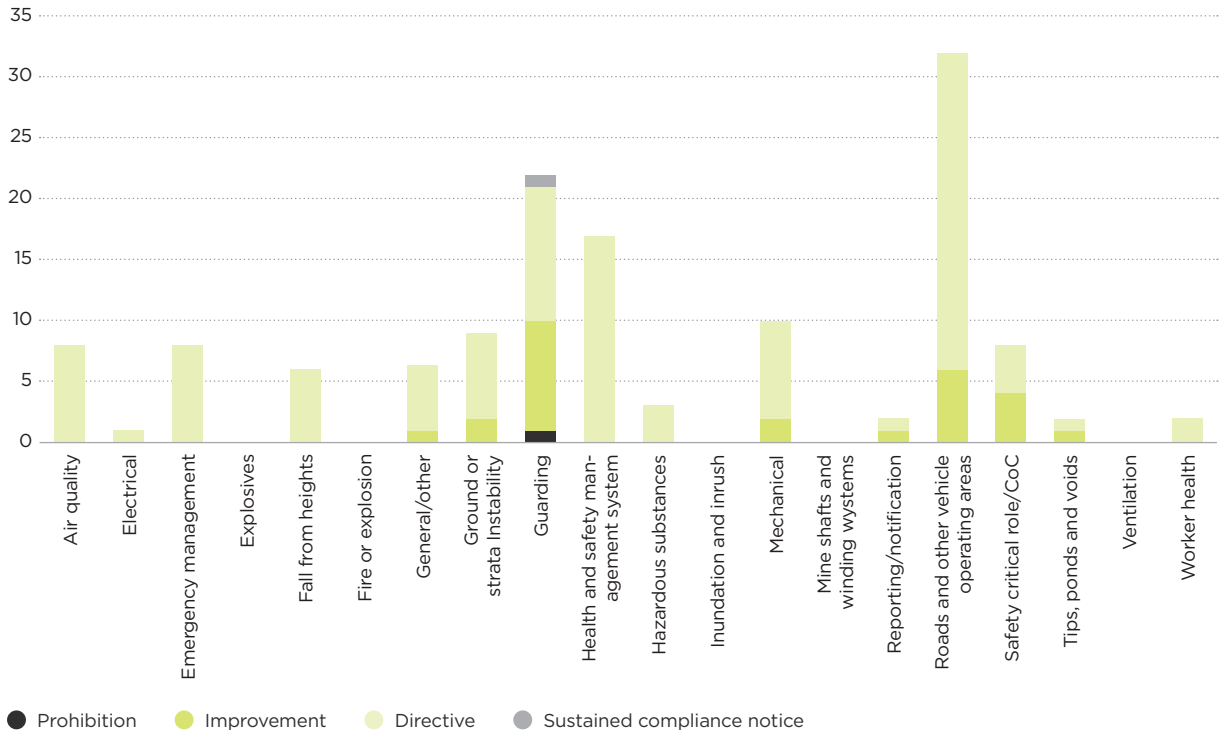


FIGURE 16: Enforcement actions issued by category 2021/22 Q4

Regulator activity comment

Over the last quarter our specialist mining and quarries inspectors have participated in the revised regulation roll out to industry. And internally, inspectors have participated in the development of guidance to accompany the regulation roll out presentations and have worked together to develop easy to explain interpretations to share with industry. The inspectors, especially quarry inspectors, are mindful that there are a lot of changes required for some operations and that it is important that we engage as often and as meaningfully as possible. The introduction of the regulations is staged over three years, and we are trying to assist at an organizational level and at a site manager level so that systems are in place prior to the date that the requirements come into force. Early voluntary compliance is a far better outcome for all sites than enforcement action from the regulator after requirements have fallen due.

In general, the numbers of inspections (assessments) has remained stable and the requirement to use enforcement in the quarter is slightly reduced. The breakdown of assessments and enforcement per sector is consistent. There has been a drop in enforcement required at tunnel sites. This is likely a reflection that major tunnel projects in Auckland had settled into steady projects after some start up issues.

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.

ISSN 2703-3392 (online)

Published: October 2022

PO Box 165, Wellington 6140, New Zealand

worksafe.govt.nz

WSNZ_4433_OCT 22

ISSN 2703-3392 (online)

WORKSAFE
Mahi Haumaru Aotearoa

Level 6, 86 Customhouse Quay
PO Box 165, Wellington 6140
0800 030 040 worksafe.govt.nz