

# Explosives Inspectorate Quarterly Report - Q3 22/23

Chief Inspector of Explosives

**Quarterly message**



1 - Hermann Fasching, Chief Inspector of Explosives

On 24 March Resources Safety and Health Queensland (RSHQ) hosted our annual Industry Leader's Briefing in Mackay where representatives from RSHQ provided updates on key health and safety issues for Queensland workers.

Some of the key messages for the Explosives Industry concern access to explosives and the Queensland Explosives Security Clearance (QESC), the introduction of smart forms in the explosive licensing process, significant incidents and the inspectorate's focus on the year ahead.

In the year ahead, the inspectorate will be focused on supporting industry to:

- increase near-miss incident reporting
- reduce recurring incidents and events
- apply higher order controls of *elimination, substitution, isolation and engineering*

## Deputy Chief Inspector of Explosives



2 - Dr. Snezana Bajic, Deputy Chief Inspector of Explosives

## Keeping the lines of communication open

In the explosives industry it is essential for employers to ensure their work environment is open to employee engagement and proactive identification of hazards. At RSHQ we encourage workers to report safety matters, without fear of adverse consequences. Companies that demonstrate a culture of safety are a hallmark of a high-reliability organisation (HRO). There is no 'bad news', as identified hazards should be seen as an opportunity to learn, improve, and prevent future incidents.

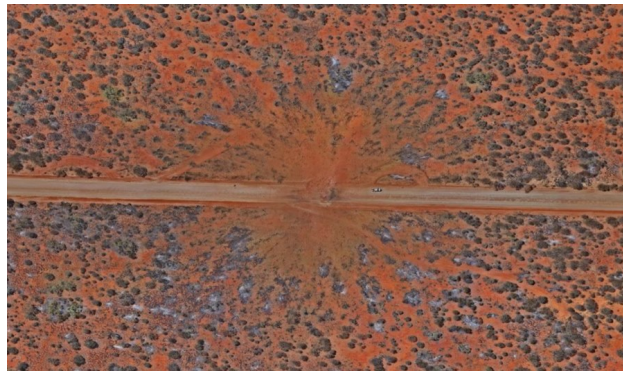
To assist in continuous learning from incidents, information sharing and engagement, the Explosives Inspectorate has committed to industry engagement opportunities with stakeholders.

In January 2023 we organised a Transport Industry liaison meeting to discuss Queensland and National legislation and licencing updates and had an open discussion about recent high-risk incidents and trends related to the explosives transport industry. Representatives from 11 companies attended the meeting in Rockhampton (in person and online). The highlight of this engagement was the presentation from ENAEX on the ammonium nitrate emulsion (ANE) tanker trailer explosion, in the remote Western Australian Goldfields in 2022.

As the Department of Mines, Industry Regulation and Safety reported ([www.dmp.wa.gov.au](http://www.dmp.wa.gov.au)), the tanker contained approximately 34 tonnes of ANE. The trailer was destroyed in the explosion which created a

crater approximately 15 x 17 metres wide and one metre deep (see image 3). Shrapnel was located around the blast location with one piece weighing approximately 25 kilograms located roughly 800 metres from the epicentre. The intensity of the explosion was such that shrubs and trees were snapped at ground level up to 40 metres away from the explosion while branches 75 millimetres thick were snapped up to 150 metres from the blast site ([dmp.wa.gov.au](http://dmp.wa.gov.au)).

More information on the incident can be found [dmp.wa.gov.au](http://dmp.wa.gov.au)



3 - Click to view

*Photo courtesy of Gold Fields, Gruyere Joint Venture ([dmp.wa.gov.au](http://dmp.wa.gov.au))*

*Drone image capturing aftermath of explosion.*

## Reporting

Under the *Explosives Act 1999*, the Chief Inspector of Explosives must be contacted by phone (1300 739 868) immediately following certain events. A written follow-up notification must then be submitted within 48 hours.

Our mission is to regulate, educate and assist the explosives industry in meeting its obligations to protect and promote safety and health of persons from risks associated with explosives. It is imperative that incidents are reported, to allow the inspectorate to investigate and communicate learnings to industry where there is a hazard and controls are eroding or when these controls are ineffective.

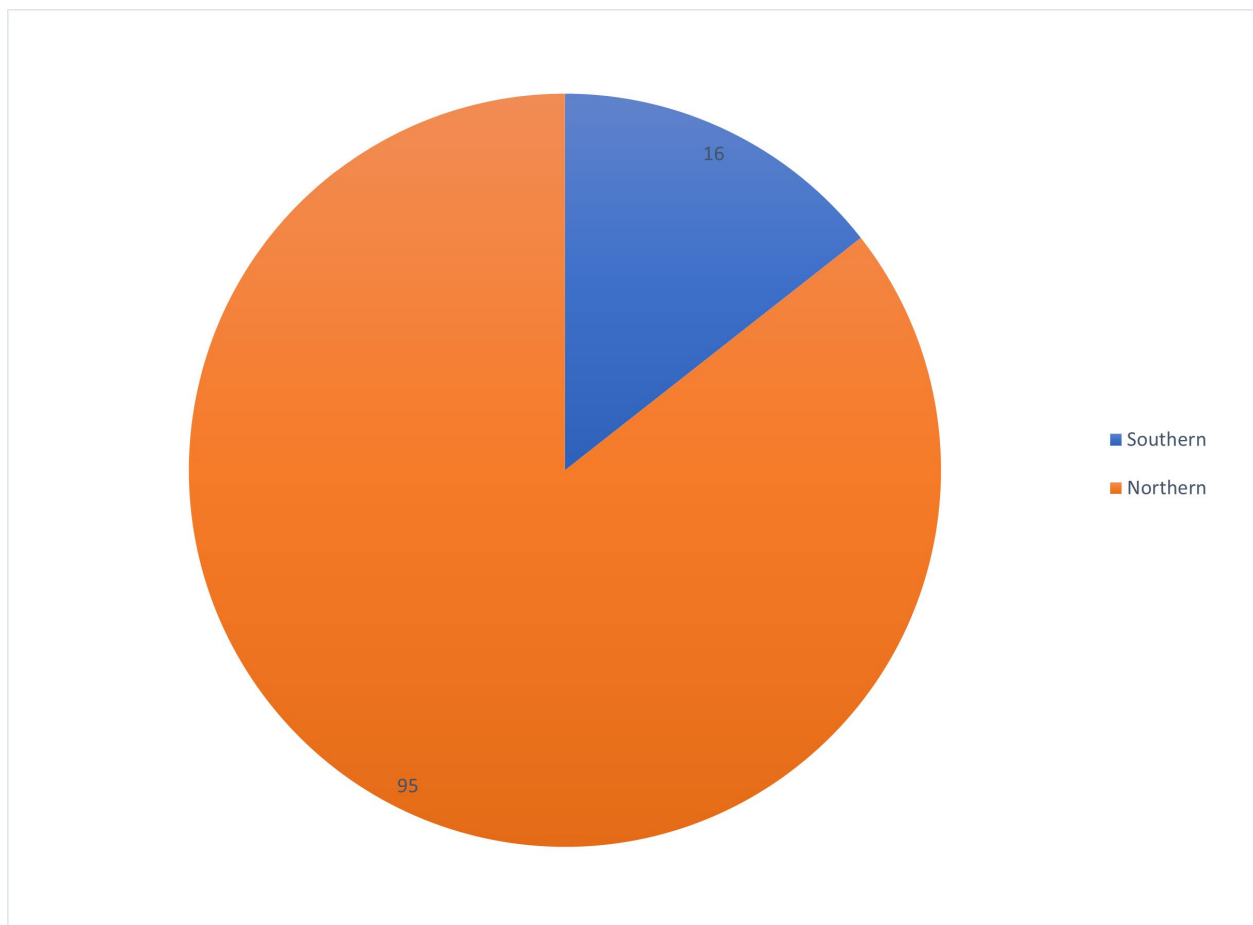
Every unreported high potential incident (HPI) should be considered both a learning opportunity wasted, and a hazard left in play, waiting to cause an incident at some point in the future;

***"a safety culture is a reporting culture in which people are prepared to report errors, near misses, unsafe conditions, inappropriate procedures, and any other concerns they may have about safety."***  
(121 Hopkins, 2009, Learning from high reliability organisations, Sydney, CCH Australia Limited.)

Continuous learning from incidents is a key part of any High Reliability Organisation or Industry. The following types of incidents need to be reported:

- actual or apparent loss or theft of explosives
- attempted theft or security threat
- accidental explosion, fire or spillage
- death of or an injury to a person
- unexpected damage to property
- misfire or
- other event that has the potential to cause any of the above.

For more information visit [Reporting explosives incidents | Business Queensland](#).



4 - Explosives Incidents by Region - Q3

## Incidents

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### *Multiple forklift incidences*

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In the last quarter there were four reported incidents involving forklifts handling detonator boxes. Common causes of these incidents were - operators not following the procedures, inadequate training/competence and no supervision. Handling of detonator boxes with forklifts is an inherently high risk operation. In view of significant increase in reported incidents of this kind, all sites should review their procedures, training matrix and resources allocated to do the operation safely.

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### *MPU accident*

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An explosives mobile processing unit (MPU) towing a fully loaded trailer of ammonium nitrate prill (AN) was struck from behind by a loaded commercial freight B-Double truck causing the trailer to rollover and spill AN on roadside. There was no fire, fuel or other chemical spillage. The site was attended by police, ambulance, fire services and explosives inspectorate. The MPU driver was shocked but not injured; the other truck driver was taken to the hospital by the ambulance. A cleaning service cleared the spillage, and the tanker was towed away. The incident brought home the need for good emergency procedures and regular drills to ensure adequate response is provided at the time of need. A [Safety Alert](#) has been issued for this incident and recommended actions.



5 - MPU Accident



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### *Incorrect fuel/oil mixed with ammonium nitrate emulsion*

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A blast was flagged as a potential misfire, due to the lack of movement and surface expression. The blast was loaded with a Heavy ANFO blend, containing 30% ANFO (blend of ammonium nitrate prill and fuel oil) and 70% gas-sensitised, ammonium nitrate emulsion (ANE).

The investigation determined that the diesel fuel used to mix the ANFO was a “premium diesel”, which contained methyl esters. These methyl esters are similar to detergents, which break down ammonium nitrate emulsions. This problem is also exacerbated by water in blast holes.

For this incident, it is believed that the ANE deteriorated to the point that it did not detonate to the full order.

All authority holders that undertake explosives manufacturing activities of Heavy ANFO must:

- Ensure that the fuel/oil component to be used will not negatively impact the ammonium nitrate emulsion; and
- Ensure that any change in supplier of the diesel or bulk explosives, triggers a change management review, to address compatibility of fuel/oils used in the explosives manufacture process.



6 – Ground Movement



7 – Ground Movement



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### *Waste ammonium nitrate emulsion transfer off site*

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A mine site collected waste ammonium nitrate emulsion (ANE) in 1000 litre, stainless steel bins, which were periodically transferred from the mine, off-site to their explosives' supplier for disposal. When an employee of the explosives' supplier removed the lid of one of these bins of waste ANE, light fuming/steaming was observed to be emitting from the bin. It is believed that the ANE was contaminated.

Authority holders undertaking explosives' manufacturing activities that involve ANE, must:

- Ensure that ANE is stored in accordance with the Australian Explosives Industry Safety Group's (AEISG) Code of Practice – Storage and Handling of UN3375, Edition 4 and management of waste ANE is conducted in accordance with Section 12. This Code stipulates, "Waste materials shall be kept in separate, labelled and lidded containers constructed of compatible material and stored in appropriate secure locations."
- Ensure that any explosives or Security Sensitive Ammonium Nitrate (SSAN), including ANEs, to be transported on a public road, conform to the requirements of the relevant transport requirements, such as the Australian Dangerous Goods Code. This includes the correct classification of the substance being transported and correct labelling of intermediate bulk containers (IBCs).



8 – Waste emulsion in bin



9 – Waste emulsion bin

## Complaints

### Illegal fireworks complaints

The majority of complaints received from members of the public to the inspectorate, for explosives related activity, continues to be for the use of illegal fireworks. The illegal use of fireworks is an ongoing nuisance for community, the Queensland Police Service and the Explosives Inspectorate.

On July 1, the Northern Territory celebrates the anniversary of their self-government. This day is famously commemorated with fireworks, which unlicensed members of the public are permitted to use for a limited time.

There is evidence of an increase in the importation of illegal fireworks into Queensland during this period, which in turn increases the risks of serious harm.

In the lead up to Territory Day, it's important to remember the risks associated with unlicensed fireworks displays:

- injuries and fatalities to people
- injuries and fatalities to animals
- damage to property, including fire
- damage to environment, and
- noise pollution.

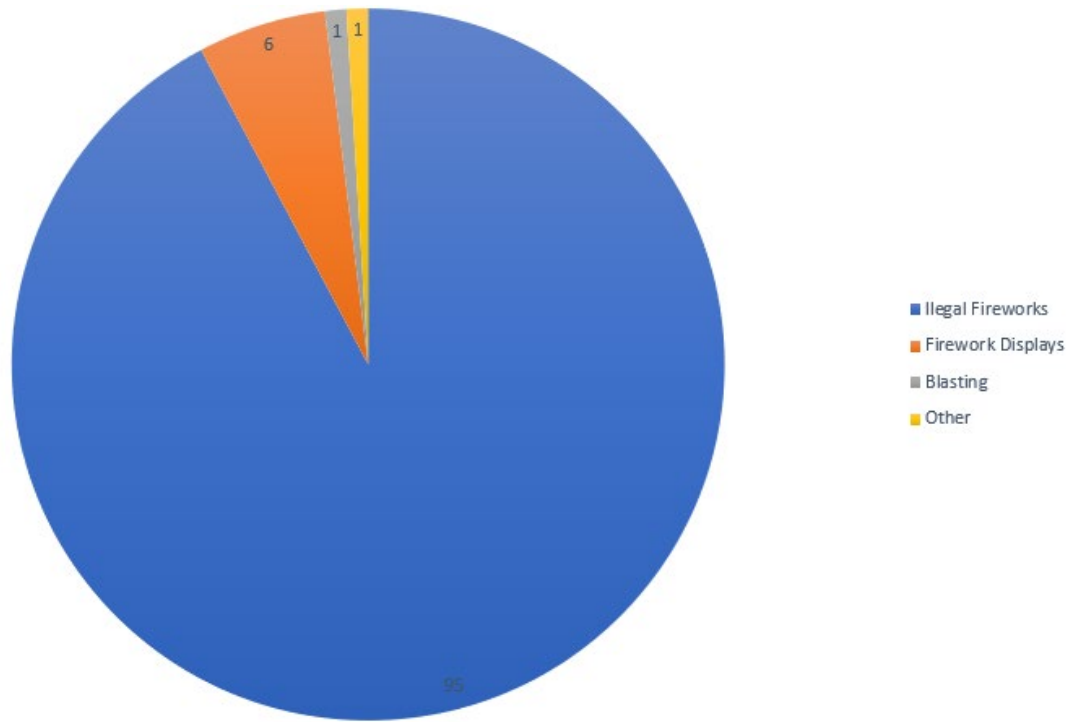
It is illegal to make, keep or use fireworks (including firecrackers) without a licence in Queensland. Unlicensed use and possession of fireworks (other than unrestricted items such as sparklers, bonbons, streamer cones or caps for toy pistols), is an offence and carries a penalty. **Offenders can be fined up to \$ 57,500 (400 penalty units), face 6 months' imprisonment, and risk severe injury.**

For penalty-free fireworks surrender call the Explosives Inspectorate on 1300 739 868

Check our [register of authorised displays](#) by professional, licenced operators to find out what's coming up near you at [Upcoming fireworks display dates | qld.gov.au Websites | Queensland Government \(rshq.qld.gov.au\)](#)

Report illegal fireworks possession, use and sale to Policelink on 131 444 or visit [Policelink - Reporting | QPS](#) and submit an [online report to the Explosives Inspectorate](#) at - [Queensland fireworks complaints | qld.gov.au Websites | Queensland Government \(rshq.qld.gov.au\)](#)

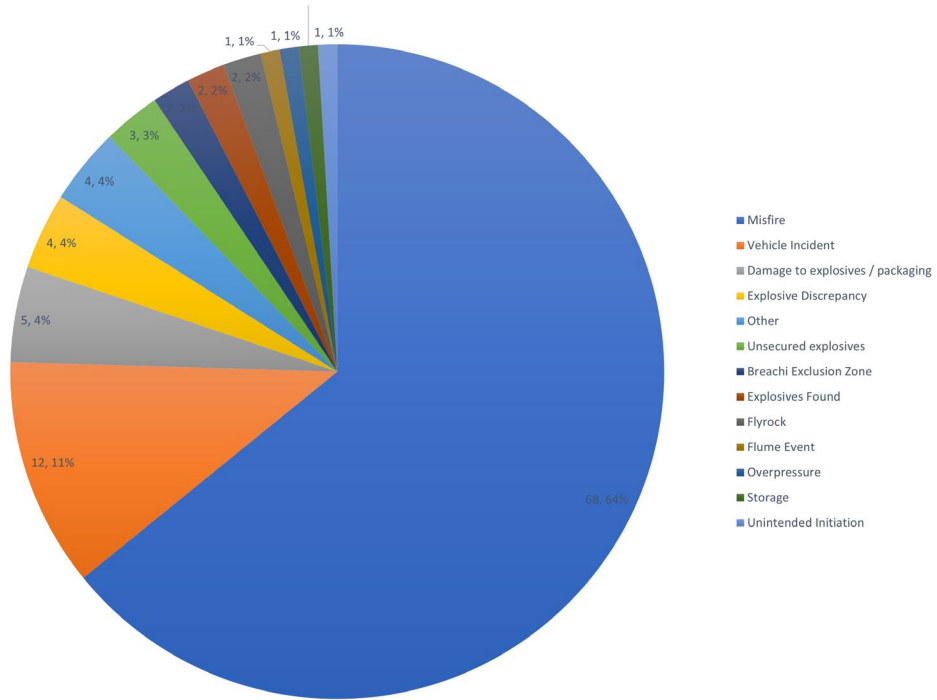




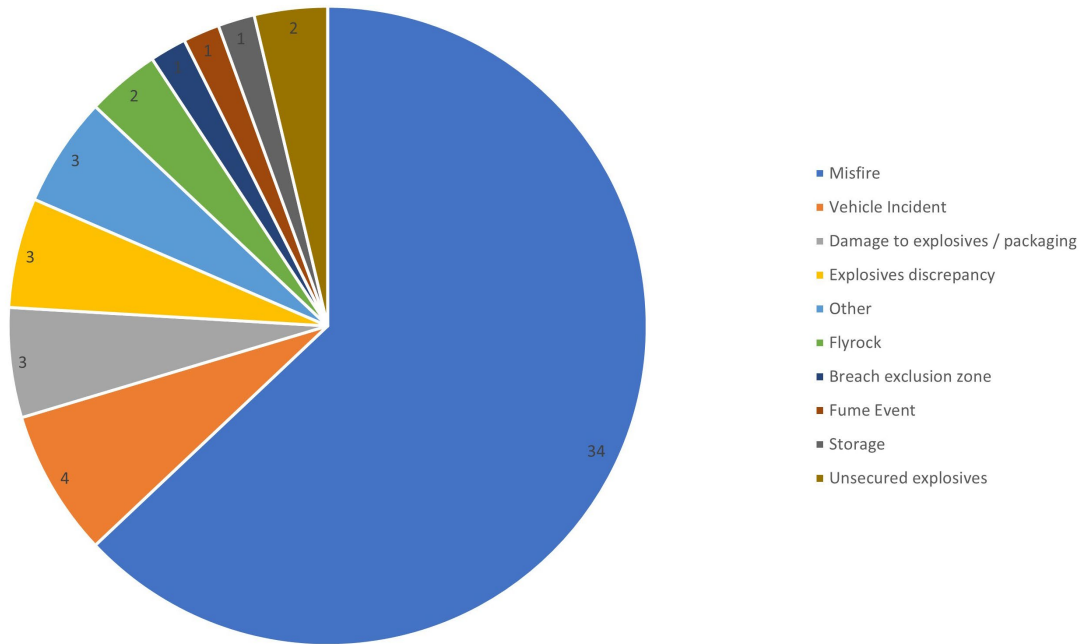
10 - Types of Complaints Received - Q3

## Statistics

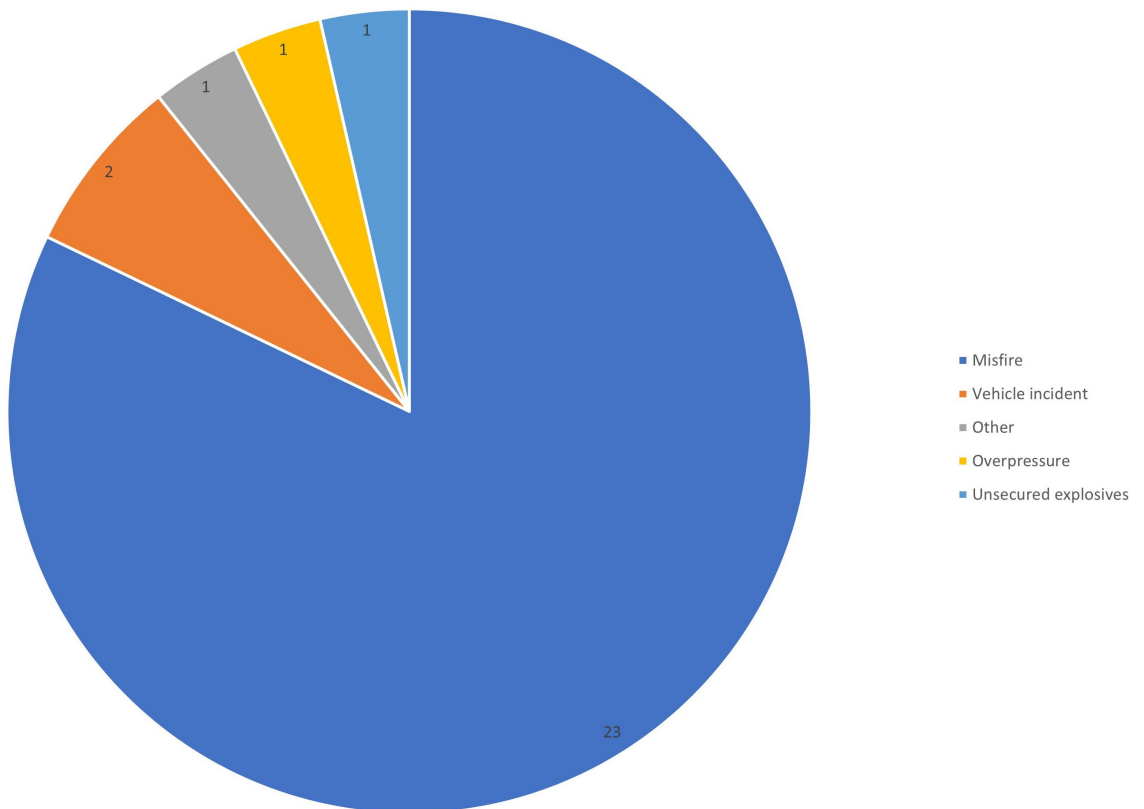
### Incidents by industry, activity or location



11 - Incidents by Type across all industries - Q3

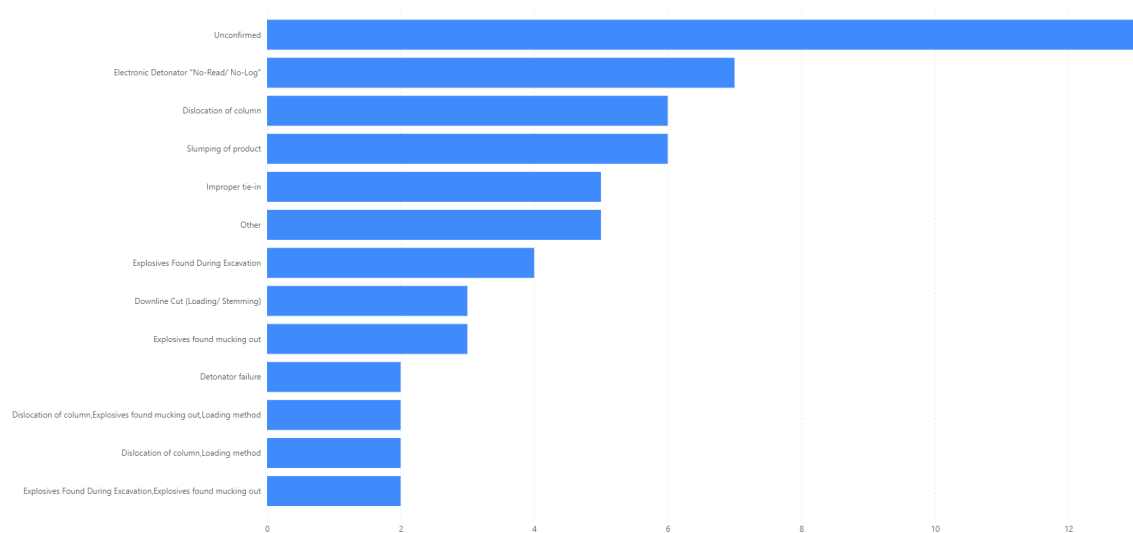


12 - Incidents - Above Ground Mining - Q3

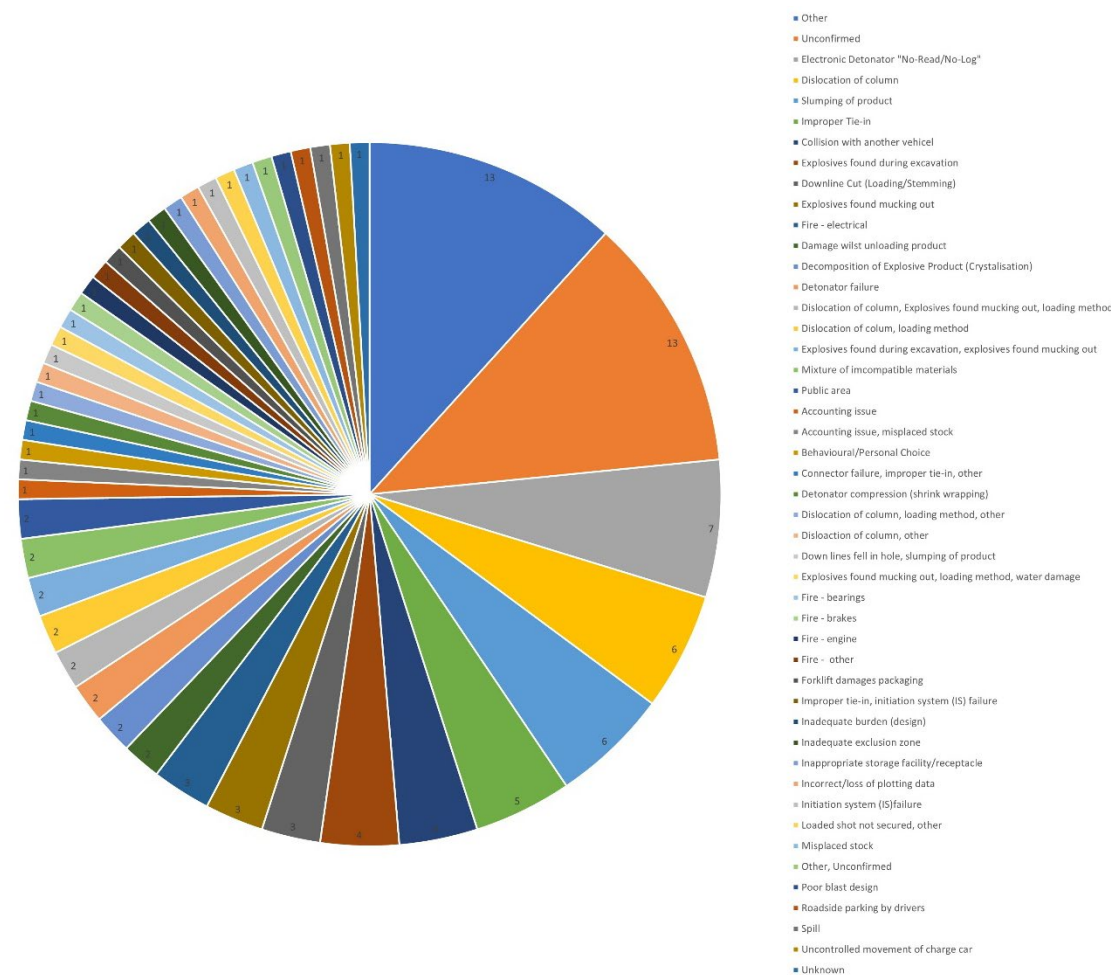


13 - Incidents - Underground Mining - Q3

# Misfire causes by industry or location



14 - Click to view - Top 10 Causes of Misfires - Q3



15 - Causes of Misfire across all industries - Q3

## Publications this quarter

[Safety Bulletin 81](#) - Firing cables exceed maximum resistance

[Safety Alert 109](#) - Rubber seal missing from gravity feed fuel cap on explosives charge up vehicle

[Safety Alert 110](#) - Vehicle collision resulting in ammonium nitrate spill

Interested in our other Safety Alerts? You can find them here: <https://www.rshq.qld.gov.au/safety-notice>

## Key updates

### Industry Leaders Briefing.

The 2023 Resources Safety and Health Queensland Industry Leaders' Briefing was held on Friday, 24 March in Mackay.

Guest speakers shared their insights into positive change in mine safety and how to manage psychosocial hazards in the resources industry.

RSHQ Chief Inspectors and divisional experts also provided updates on key health and safety issues for Queensland workers.

[Industry Leaders' Briefing 2023 | Resources Safety & Health Queensland \(rshq.qld.gov.au\)](#)

### Fireworks Codes of Practice.

The Inspectorate continues to progress work on two codes of practice.

The new code for explosive *special effects in film and television* has had an initial review by current licence holders and will be circulated for broader industry consultation once feedback is considered and incorporated.

An updated version of the code for fireworks in Queensland is currently under internal review before being released for broader assessment by industry, other agencies and any interested members of the public.

It is hoped that both codes will be published in the next financial year.

Any questions or requirements for additional information should be directed to Sean Ryan at [explosives@rshq.qld.gov.au](mailto:explosives@rshq.qld.gov.au)

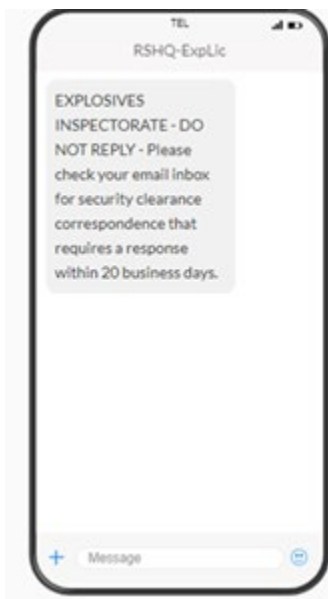


## Transport Industry Liaison Group.

On 31 January the Inspectorate met with member of the transport industry share information and learnings from incidents and inspections over the last few years.



## What's new in licensing



The Explosives Inspectorate have recognised that many people within industry may not check emails on a regular basis and, as such, some urgent communications being sent to applicants and holders are being missed.

To highlight these urgent communications, the Explosives Licensing is introducing MessageMedia SMS service to inform applicants and holder when urgent communications have been emailed to the holder that require action.

## What's coming up.

[The Institute of Quarrying Australia: QLD 2023 Quarrying & Mining Safety & Health Conference](#) - 2nd June 2023

Transport Industry Liaison Group (TILG) Meeting - July, Rockhampton

[The Queensland Mining Industry Health and Safety Conference](#) - 20-23 August 2023

Minister's Safety Reset - October 2023

[Territory Day](#) - 1 July 2023

## Contact us

### Explosives inspectorate contact details

#### Website

[Resources Safety & Health Queensland \(rshq.qld.gov.au\)](http://rshq.qld.gov.au)

#### 24 Hour Explosives Inspectorate Hotline

1300 739 868 (manned by Explosives Inspectors)

#### Report an Incident

1300 739 868 (manned by Explosives Inspectors)

[Electronically Report an Explosives Incident](#)

#### Make a Complaint about Explosives or Fireworks

[Electronically make a complaint](#)

#### Explosives Licensing Team

Phone during business hours: 07 3199 8023

Email: [explicensing@rshq.qld.gov.au](mailto:explicensing@rshq.qld.gov.au)

#### Queensland Explosives Security Clearance Team

Phone during business hours: 07 3199 8023

Email: [QESC@rshq.qld.gov.au](mailto:QESC@rshq.qld.gov.au)

#### General Enquiries

Phone during business hours: 07 3199 8023

Email: [explosives@rshq.qld.gov.au](mailto:explosives@rshq.qld.gov.au)