

CASE STUDIES

Multiple Fatality Investigation and Findings

Owen Mc Cree
Managing Director – The Compliance Group



South African Institute of
Occupational Safety and Health
Corporate Member





WHAT DO WE MEAN BY

MULTIPLE FATALITY?



MULTIPLE FATALITY ON RISK MATRICES

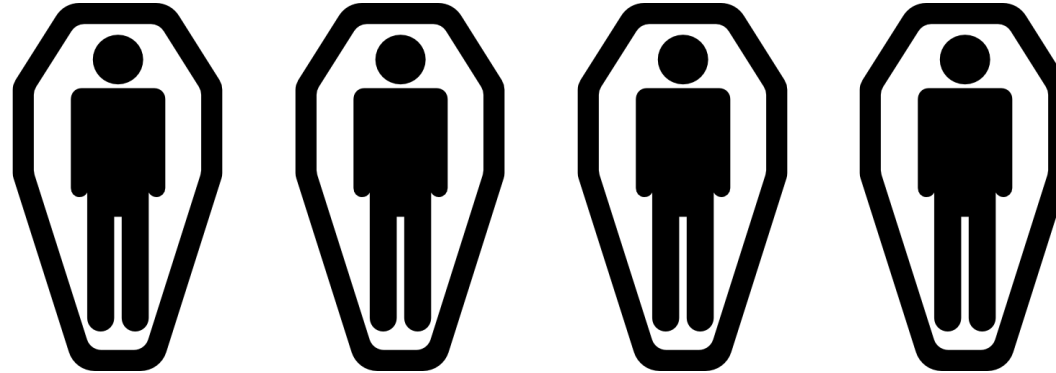


HSE RISK MATRIX							
CONSEQUENCES		SEVERITY	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
		People	Slight Injury	Minor Injury	Major Injury / Health effects	Single Fatality / Permanent total disability	Multiple Fatalities / Permanent total disability
		Environment	Slight Impact	Minor Impact	Moderate Impact	Major Impact	Massive Impact
		Asset	Slight Damage	Minor Damage	Local Damage	Major Damage	Extensive Damage
		Reputation	Slight Impact	Limited Impact	Considerable Impact	Major National Impact	Major International Impact
LIKELIHOOD	E Almost Certain	Incident has occurred several time in company	E1	E2	E3	E4	E5
	D Likely	Incident has occurred more than once per year in company	D1	D2	D3	D4	D5
	C Possible	Incident has occurred in company or more than once in industry world wide	C1	C2	C3	C4	C5
	B Unlikely	Incident has occurred in industry world wide	B1	B2	B3	B4	B5
	A Remotely likely to happen	Never heard of in industry world wide but could occur	A1	A2	A3	A4	A5



We then conclude that a multiple fatality is:

“A single incident where more than 1 person was fatally injured”



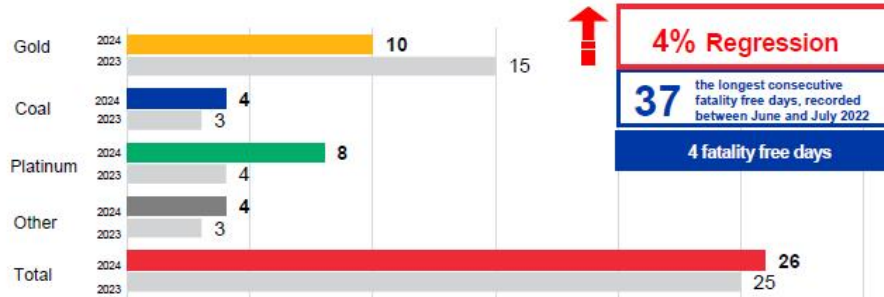
MINING SAFETY PERFORMANCE



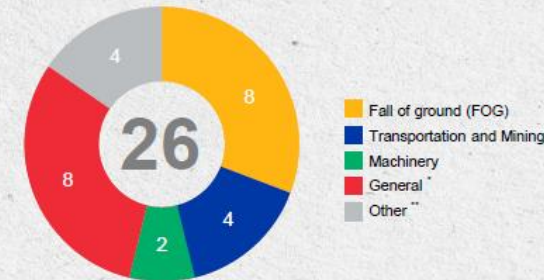
SAFETY DASHBOARD: FATALITIES



Fatalities per commodity to date (05 August 2024)



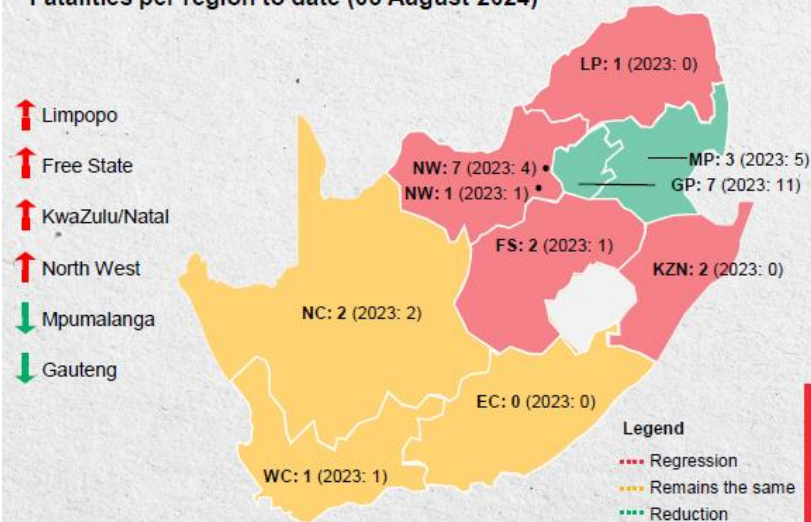
Fatalities by classification to date (05 August 2024)



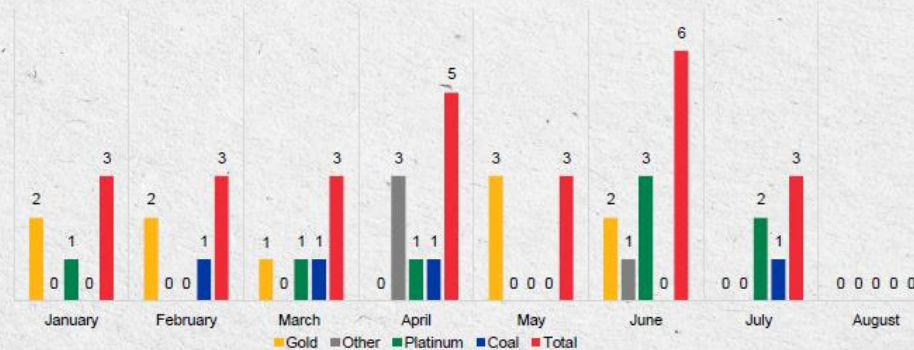
*Struck by, Falling in, Drowning, Rolling Rock, Inundation, Mudrush, Burning and Scalding

** Electricity, Fires, Explosives, Heat Exhaustion, Miscellaneous and Conveyancing

Fatalities per region to date (05 August 2024)



Monthly fatalities per commodity for 2024



↑ 26 FATALITIES
AS AT 05 AUGUST 2024 (2023: 25)



South African Institute of
Occupational Safety and Health
Corporate Member



All Mines Fatalities per Classification			
Classification	01/02/2022 11/12/2022	01/01/2023- 11/12/2023	% Change
FALL OF GROUND/rockfall	5	14	180
MACHINERY	0	2	200
TRANSPORTATION AND MINING	19	8	-58
GENERAL	17	15	-12
CONVEYANCE ACCIDENTS (SHAFT/WINZE)	1	13	1200
ELECTRICITY	1	0	-100
FIRES	1	0	-100
EXPLOSIVES	1	0	-100
SUBSIDENCE OR CAVING	0	0	#DIV/0!
HEAT SICKNESS	0	0	#DIV/0!
DIVING SICKNESS	0	0	#DIV/0!
OCCUPATIONAL DISEASES	0	0	#DIV/0!
MISCELLANEOUS (specify)	0	2	200
TOTAL	45	54	20

Home > News > PGMs > Eleven miners killed, 75 injured in Implats Rustenburg accident

Eleven miners killed, 75 injured in Implats Rustenburg accident

By David McKay - November 27, 2023



Latest Miningmx News

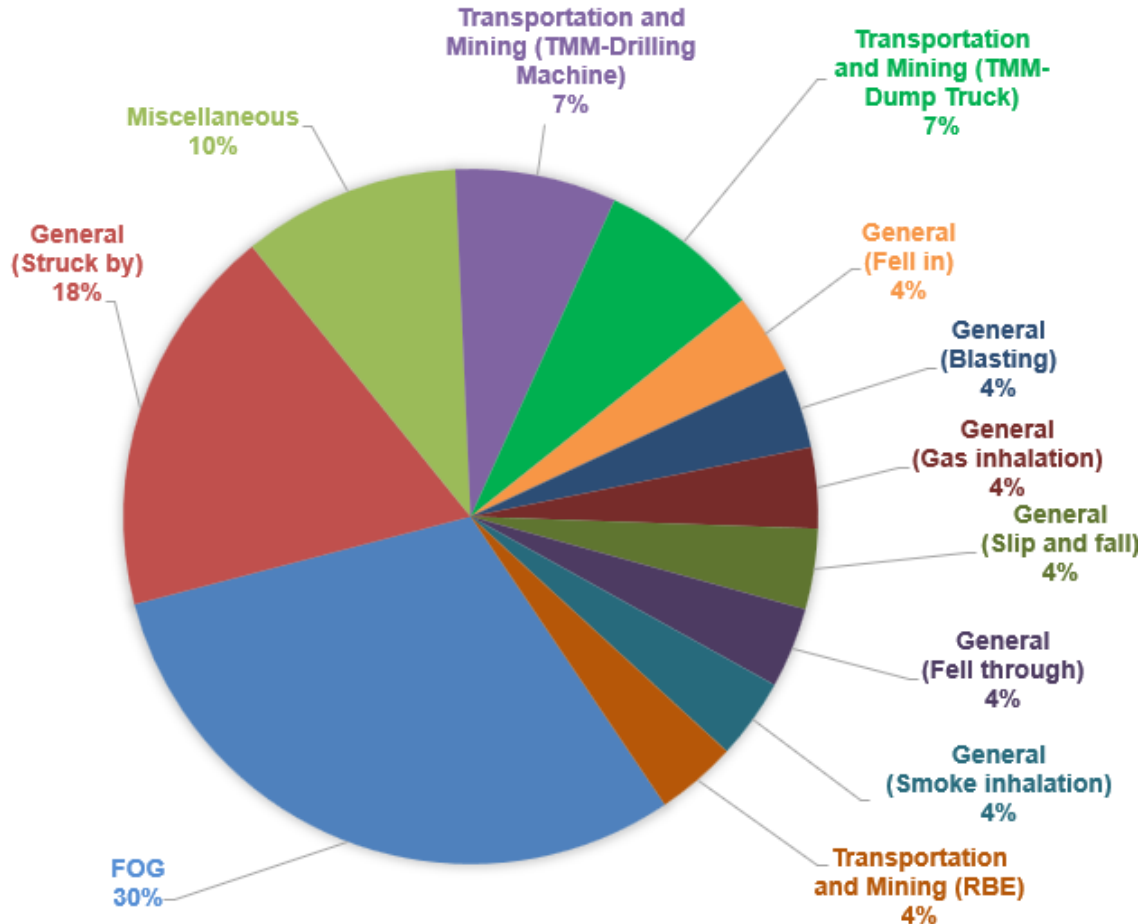


South African Institute of
Occupational Safety and Health
Corporate Member

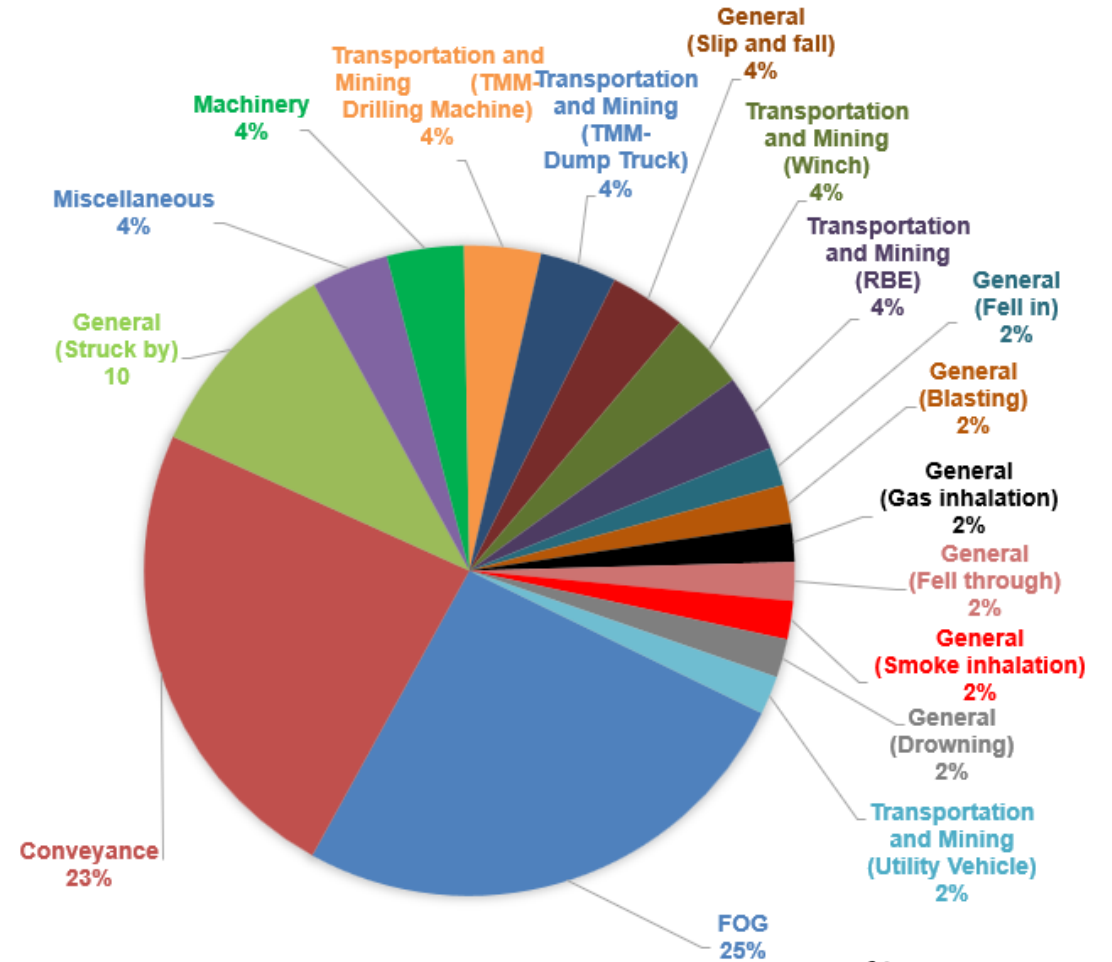
IMPACT OF MULTIPLE FATALITIES ON STATISTICS



All Mines
Percentage Fatalities by Classification
(01 Jan - 14 Aug) 2023



All Mines
Percentage Fatalities by Classification
(01 Jan - 11 Dec) 2023



ROOF OF AN AVERAGE UNDERGROUND STOPE PANEL



TYPICAL SLAB OF ROCK DISLODGING DURING A FOG



TYPICAL SLAB OF ROCK DISLODGING DURING A FOG



LOCO COLLISION UNDERGROUND



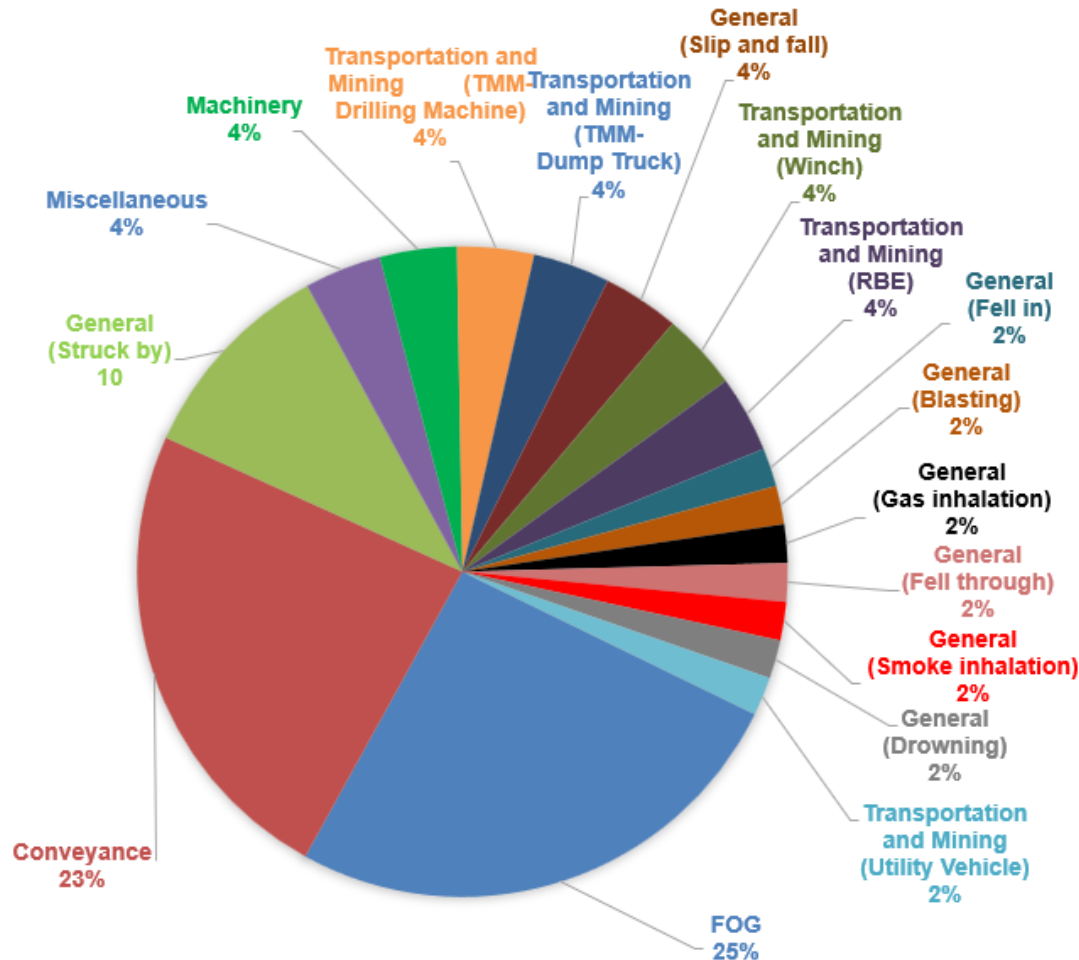
LOCO COLLISION UNDERGROUND



NUMBER OF INCIDENTS WITH POTENTIAL MULTIPLE FATALITY



**All Mines
Percentage Fatalities by Classification
(01 Jan - 11 Dec) 2023**



All Mines Injuries per Classification

Classification	01/02/2022 11/12/2022	01/01/2023- 11/12/2023	% Change
FALL OF GROUND/rockfall	284	274	-4
MACHINERY	159	149	-6
TRANSPORTATION AND MINING	340	354	4
GENERAL	1149	1008	-12
CONVEYANCE ACCIDENTS (SHAFT/WINZE)	22	18	-18
ELECTRICITY (Not causing fire)	17	15	-12
FIRES	6	14	133
EXPLOSIVES	2	6	200
SUBSIDENCE OR CAVING	0	0	#DIV/0!
HEAT SICKNESS	3	14	367
DIVING SICKNESS	0	0	#DIV/0!
OCCUPATIONAL DISEASES	1	0	-100
MISCELLANEOUS (specify)	5	55	1000
TOTAL	1988	1907	-4

All Mines Fatalities per Classification

Classification	01/02/2022 11/12/2022	01/01/2023- 11/12/2023	% Change
FALL OF GROUND/rockfall	5	14	180
MACHINERY	0	2	200
TRANSPORTATION AND MINING	19	8	-58
GENERAL	17	15	-12
CONVEYANCE ACCIDENTS (SHAFT/WINZE)	1	13	1200
ELECTRICITY	1	0	-100
FIRES	1	0	-100
EXPLOSIVES	1	0	-100
SUBSIDENCE OR CAVING	0	0	#DIV/0!
HEAT SICKNESS	0	0	#DIV/0!
DIVING SICKNESS	0	0	#DIV/0!
OCCUPATIONAL DISEASES	0	0	#DIV/0!
MISCELLANEOUS (specify)	0	2	200
TOTAL	45	54	20



HOW DO WE

INVESTIGATE

MULTIPLE FATALITY INCIDENTS



1. Scale and Scope of the Investigation

- **Single Fatality Incident:** The investigation tends to be more focused, involving fewer stakeholders and a smaller investigation team. The scope is often limited to understanding the specific cause of death, identifying immediate contributing factors, and determining any violations of safety regulations.
- **Multiple Fatality Incident:** The investigation is much broader in scope. It involves multiple agencies (e.g., health and safety regulators, law enforcement, and sometimes national or international bodies) and often requires a larger team of investigators. The goal is to uncover not just the direct causes but also systemic issues that may have led to the tragedy.

2. Resources Required

- **Single Fatality Incident:** Fewer resources are typically required, including manpower, time, and financial costs. The investigation might involve a smaller team of specialists, such as forensic experts, safety officers, and legal professionals.
- **Multiple Fatality Incident:** These investigations are resource-intensive. They often require specialized equipment, a larger and more diverse team (including experts in structural engineering, safety management, and psychology), and more time. Additionally, there may be greater public and media interest, necessitating more extensive communication efforts.

3. Complexity of the Investigation

- **Single Fatality Incident:** The complexity is generally lower, with fewer variables to consider. The investigation might focus on a single point of failure or a specific safety lapse.
- **Multiple Fatality Incident:** These investigations are inherently more complex due to the multiple points of failure or contributing factors that must be considered. For instance, in a mining disaster, investigators might need to evaluate the mine's design, emergency response protocols, and even broader regulatory compliance over time.

4. Legal and Regulatory Implications

- **Single Fatality Incident:** The legal implications may involve determining liability for the death, which might lead to fines, sanctions, or criminal charges for individuals or companies.
- **Multiple Fatality Incident:** The legal stakes are higher, and the incident may lead to large-scale legal proceedings, including class action lawsuits, extensive regulatory reviews, and even changes in legislation. There is often more significant pressure on investigators to provide comprehensive findings that can prevent future occurrences.

5. Stakeholder Engagement

- **Single Fatality Incident:** Fewer stakeholders are typically involved, which might include the victim's family, the employer, and regulatory bodies.
- **Multiple Fatality Incident:** A much broader range of stakeholders is involved, including multiple families, communities, the media, and sometimes international organizations. The investigation might also involve coordination with emergency services, government departments, and unions.

6. Public and Media Attention

- **Single Fatality Incident:** Generally, these incidents attract limited media attention unless the circumstances are particularly unusual.
- **Multiple Fatality Incident:** These incidents often draw significant public and media scrutiny, which can influence the pace and transparency of the investigation. Investigators may need to provide regular updates to the public and manage communication carefully to maintain trust.

In summary, while both types of investigations follow similar procedures, multiple fatality incidents require more extensive resources, involve a wider range of stakeholders, and carry higher legal, public, and regulatory implications.



There should be **NO DIFFERENCE** in the way investigations are done, based on the **NUMBER OF CASUALTIES**.

We need to investigate the **INCIDENT**, not the injuries.



MOST FREQUENT FINDINGS



MOST FREQUENT FINDINGS



- **Uncoordinated work efforts** between:
 - Teams
 - Individuals
 - Supervisors and Teams
- When an employee automatically assumes that the boss will take charge as soon as they enter the workplace, allowing the employee to relax or disengage from their responsibilities, it can be described as "**passive dependence**" or "**abdication of responsibility.**" This behavior reflects a mindset where the employee relies on the presence of the boss to take over tasks or decision-making, instead of maintaining their own level of engagement and responsibility.
- Tasks requiring close proximity of workers / task resource density
- Limited Escape Routes or dimensions of escape routes.
- Delay in emergency response.



**EVERY LIFE
MATTERS** and
deserves the **SAME
EFFORT** for
investigations as we
put into multiple
fatality, investigations.



THANK YOU

The Compliance Group

Owen Mc Cree
Managing Director
084 680 1420

owen@thecompliancegroup.co.za