UNUSUAL OCCURRENCE REPORT FOR GROUNDFALL/ROCKBURST (UNDERGROUND MINE)

Workplace Safety North™
A Health & Safety Ontario Partner

THIS REPORT IS FOR: ☐ **FALL OF GROUND** ☐ **ROCKBURST**

GENERAL

Company incident code:	☐ **Internal Report**	☐ **Reportable Incident** (see Section 4 of Ontario Regulation 420/21)
Company:	**Mine**:	**Address**:
Date:	☐ Unknown **Time of occurrence**: ☐ AM ☐ PM ☐ Unknown	**Time discovered**: ☐ AM ☐ PM ☐ Unknown
Damage sustained by mine openings:	☐ None ☐ Single location ☐ Multiple locations	
General description of occurrence:		

WORKERS

At time of incident workers were: ☐ Underground ☐ Surface ☐ No one Working ☐ Unknown	
Were workers normally required in area: ☐ Yes ☐ No	**Was access to the area restricted?** ☐ Yes ☐ No
Were workers in immediate area of damage: ☐ Yes ☐ No	**To within what distance of the incident were workers present:** ☐ m ☐ ft
Were there any injuries: ☐ Yes ☐ No	**Nature of Injuries**:

SEISMICITY (FOR ROCKBURSTS ONLY)

Seismic event that most likely triggered damage:	Magnitude:	Coordinates: North East Depth ☐ m ☐ ft		
	Apparent seismic source mechanism:	☐ Undetermined ☐ Strain burst ☐ Pillar burst ☐ Fault slip		
Magnitude scale: ☐ Nuttli ☐ Richter ☐ Other:		Magnitude of first event:	Magnitude of largest event:	
Event magnitudes:	< 1	1- 2	2– 3	> 3
Number of events:	☐ Unknown	☐ Unknown	☐ Unknown	☐ Unknown
Period of time over which events occurred (if more than one): ☐ Unknown ☐ Seconds ☐ Minutes ☐ Hours				
Location of major events: ☐ Hanging wall ☐ Footwall ☐ Ore Zone ☐ Not Located				
Location determined by: ☐ Visual Inspection ☐ Seismic Monitoring Equipment ☐ Other Monitoring Equipment ☐ Estimated ☐ Not Located				
The Rockburst: ☐ Triggered a fall of ground ☐ Displaced material violently ☐ Was contained by ground support				

DAMAGE LOCATION #1

DESCRIPTION OF OCCURRENCE

Mine level:	**Location**:			
This area was: ☐ Active ☐ Inactive ☐ Abandoned	Coordinates:	North	East	Depth ☐ m ☐ ft
Geological zone: ☐ H/W ☐ F/W ☐ Ore	**Rock type**:			
The incident occurred in: ☐ Raise ☐ Drift/XC ☐ Pillar ☐ Shaft ☐ Ore/waste pass ☐ Stope ☐ Other:				
Opening dimensions:	Width:	Length:	Span:	Height: ☐ ft ☐ m
Damage sustained to: ☐ Excavation ☐ Ground Support ☐ Equipment ☐ Unknown				
Associated mining activity: ☐ Nothing apparent ☐ Backfilling ☐ Blasting ☐ Bolting ☐ Drilling ☐ Mucking ☐ Scaling				
Ore Recovery in Immediate Area: ☐ None ☐ Primary Recovery ☐ Pillar or Secondary Recovery				
Mining Method: ☐ None ☐ Shrinkage ☐ Cut & Fill ☐ Post Pillar Cut & Fill ☐ Undercut & Fill ☐ Blasthole ☐ VRM ☐ Slot & Slash ☐ Uppers Retreat ☐ Sublevel Caving ☐ Block Caving ☐ Other:				
If pillar sustained damage: Type: ☐ Rib ☐ Post ☐ Sill ☐ Crown ☐ Other:				
Pillar dimensions: Height:	Width:	Length:	☐ m ☐ ft	
Material displaced from: ☐ Face ☐ Back ☐ Wall ☐ Floor ☐ Shoulder ☐ Brow ☐ Unknown ☐ Other:				
Material displaced: ☐ tonnes ☐ tons	From behind support (uncontained):	From unsupported ground:	Contained by support:	Total:
Damage dimensions:	Length:	Width:	Max. depth:	☐ m ☐ ft
Displaced material:	☐ Wedge ☐ Tabular ☐ Blocky ☐ Thin/slabbing ☐ Irregular ☐ Shotcrete ☐ Unknown			
Rockburst damage mechanism:	☐ Rock bulking due to fracturing ☐ Rock ejection due to seismic energy transfer ☐ Rock fall due to seismic shaking ☐ Unknown ☐ Not applicable			
Comments (include description of the triggering mechanism such as drilling and blasting, stress or structural, others):				
Rock mass characteristics: (choose one only)	☐ Massive ☐ Bedded ☐ Blocky/Chunks ☐ Fractured ☐ Slabbing ☐ Unknown			
Structural geology and water:	☐ Dyke ☐ Fault/shear ☐ Contacts ☐ Steeply dipping joints ☐ Flat lying joints ☐ Joint alteration/infilling ☐ Water			
Fault/dyke description:	Orientation: ☐ trend/plunge ☐ dip/dip direction		Thickness: ☐ m ☐ ft	
Comments:				

DAMAGE LOCATION #1

ROCK SUPPORT SYSTEM

Reinforcement	Type	Location		Length	Pattern		Performance	
		Back	Walls		Wide	Long	Failed	Beyond
Mechanical bolts								
Resin rebars								
Friction stabilizers								
Expandable bolts								
Dynamic bolts								
Cable bolts								

Surface support	Type	Location		Dimension or thickness	Performance		
		Back	Walls		Cracked or bulged	Broken	Failed
Wire-mesh							
Shotcrete							
Straps							

Other system	Used to support		Performance		
	Back	Walls	Deformed	Broken	Failed

Backfill Type	Location or Opening Backfilled	Binder Type and Content	Percentage Filled

Comments Regarding Effectiveness of Support Systems:

Follow-up Action:

DAMAGE LOCATION #2

DESCRIPTION OF OCCURRENCE

Mine level:	**Location**:			
This area was: ☐ Active ☐ Inactive ☐ Abandoned	Coordinates:	North	East	Depth ☐ m ☐ ft
Geological zone: ☐ H/W ☐ F/W ☐ Ore	**Rock type**:			
The incident occurred in: ☐ Raise ☐ Drift/XC ☐ Pillar ☐ Shaft ☐ Ore/waste pass ☐ Stope ☐ Other:				
Opening dimensions:	Width:	Length:	Span:	Height: ☐ ft ☐ m
Damage sustained to: ☐ Excavation ☐ Ground Support ☐ Equipment ☐ Unknown				
Associated mining activity: ☐ Nothing apparent ☐ Backfilling ☐ Blasting ☐ Bolting ☐ Drilling ☐ Mucking ☐ Scaling				
Ore Recovery in Immediate Area: ☐ None ☐ Primary Recovery ☐ Pillar or Secondary Recovery				
Mining Method: ☐ None ☐ Shrinkage ☐ Cut & Fill ☐ Post Pillar Cut & Fill ☐ Undercut & Fill ☐ Blasthole ☐ VRM ☐ Slot & Slash ☐ Uppers Retreat ☐ Sublevel Caving ☐ Block Caving ☐ Other:				
If pillar sustained damage: Type: ☐ Rib ☐ Post ☐ Sill ☐ Crown ☐ Other:				
Pillar dimensions: Height:	Width:	Length:	☐ m ☐ ft	
Material displaced from: ☐ Face ☐ Back ☐ Wall ☐ Floor ☐ Shoulder ☐ Brow ☐ Unknown ☐ Other:				
Material displaced: ☐ tonnes ☐ tons	From behind support (uncontained):	From unsupported ground:	Contained by support:	Total:
Damage dimensions:	Length:	Width:	Max. depth:	☐ m ☐ ft
Displaced material:	☐ Wedge ☐ Tabular ☐ Blocky ☐ Thin/slabbing ☐ Irregular ☐ Shotcrete ☐ Unknown			
Rockburst damage mechanism:	☐ Rock bulking due to fracturing ☐ Rock ejection due to seismic energy transfer ☐ Rock fall due to seismic shaking ☐ Unknown ☐ Not applicable			
Comments:				
Rock mass characteristics: (choose one only)	☐ Massive ☐ Bedded ☐ Blocky/Chunks ☐ Fractured ☐ Slabbing ☐ Unknown			
Structural geology and water:	☐ Dyke ☐ Fault/shear ☐ Contacts ☐ Steeply dipping joints ☐ Flat lying joints ☐ Joint alteration/infilling ☐ Water			
Fault/dyke description:	Orientation: ☐ trend/plunge ☐ dip/dip direction		Thickness: ☐ m ☐ ft	
Comments:				

DAMAGE LOCATION #2

ROCK SUPPORT SYSTEM

Reinforcement	Type	Location		Length	Pattern		Performance	
		Back	Walls		Wide	Long	Failed	Beyond
Mechanical bolts								
Resin rebars								
Friction stabilizers								
Expandable bolts								
Dynamic bolts								
Cable bolts								

Surface support	Type	Location		Dimension or thickness	Performance		
		Back	Walls		Cracked or bulged	Broken	Failed
Wire-mesh							
Shotcrete							
Straps							

Other system	Used to support		Performance		
	Back	Walls	Deformed	Broken	Failed

Backfill Type	Location or Opening Backfilled	Binder Type and Content	Percentage Filled

Comments Regarding Effectiveness of Support Systems:

Follow-up Action:

DAMAGE LOCATION #3

DESCRIPTION OF OCCURRENCE

Mine level:	**Location**:			
This area was: ☐ Active ☐ Inactive ☐ Abandoned	Coordinates:	North	East	Depth ☐ m ☐ ft
Geological zone: ☐ H/W ☐ F/W ☐ Ore	**Rock type**:			
The incident occurred in: ☐ Raise ☐ Drift/XC ☐ Pillar ☐ Shaft ☐ Ore/waste pass ☐ Stope ☐ Other:				
Opening dimensions:	Width:	Length:	Span:	Height: ☐ ft ☐ m
Damage sustained to: ☐ Excavation ☐ Ground Support ☐ Equipment ☐ Unknown				
Associated mining activity: ☐ Nothing apparent ☐ Backfilling ☐ Blasting ☐ Bolting ☐ Drilling ☐ Mucking ☐ Scaling				
Ore Recovery in Immediate Area: ☐ None ☐ Primary Recovery ☐ Pillar or Secondary Recovery				
Mining Method: ☐ None ☐ Shrinkage ☐ Cut & Fill ☐ Post Pillar Cut & Fill ☐ Undercut & Fill ☐ Blasthole ☐ VRM ☐ Slot & Slash ☐ Uppers Retreat ☐ Sublevel Caving ☐ Block Caving ☐ Other:				
If pillar sustained damage: Type: ☐ Rib ☐ Post ☐ Sill ☐ Crown ☐ Other:				
Pillar dimensions: Height:	Width:	Length:	☐ m ☐ ft	
Material displaced from: ☐ Face ☐ Back ☐ Wall ☐ Floor ☐ Shoulder ☐ Brow ☐ Unknown ☐ Other:				
Material displaced: ☐ tonnes ☐ tons	From behind support (uncontained):	From unsupported ground:	Contained by support:	Total:
Damage dimensions:	Length:	Width:	Max. depth:	☐ m ☐ ft
Displaced material:	☐ Wedge ☐ Tabular ☐ Blocky ☐ Thin/slabbing ☐ Irregular ☐ Shotcrete ☐ Unknown			
Rockburst damage mechanism:	☐ Rock bulking due to fracturing ☐ Rock ejection due to seismic energy transfer ☐ Rock fall due to seismic shaking ☐ Unknown ☐ Not applicable			
Comments:				
Rock mass characteristics: (choose one only)	☐ Massive ☐ Bedded ☐ Blocky/Chunks ☐ Fractured ☐ Slabbing ☐ Unknown			
Structural geology and water:	☐ Dyke ☐ Fault/shear ☐ Contacts ☐ Steeply dipping joints ☐ Flat lying joints ☐ Joint alteration/infilling ☐ Water			
Fault/dyke description:	Orientation: ☐ trend/plunge ☐ dip/dip direction		Thickness: ☐ m ☐ ft	
Comments:				

DAMAGE LOCATION #3

ROCK SUPPORT SYSTEM

Reinforcement	Type	Location		Length	Pattern		Performance	
		Back	Walls		Wide	Long	Failed	Beyond
Mechanical bolts								
Resin rebars								
Friction stabilizers								
Expandable bolts								
Dynamic bolts								
Cable bolts								

Surface support	Type	Location		Dimension or thickness	Performance		
		Back	Walls		Cracked or bulged	Broken	Failed
Wire-mesh							
Shotcrete							
Straps							

Other system	Used to support		Performance		
	Back	Walls	Deformed	Broken	Failed

Backfill Type	Location or Opening Backfilled	Binder Type and Content	Percentage Filled

Comments Regarding Effectiveness of Support Systems:

Follow-up Action:

ATTACHMENTS

Please, provide a list of attached documents (e.g., photos, mine plans, etc.) if applicable.

SIGN-OFF

Date Report Completed	Name of Person Completing Report	Title
Phone: ( )	**Fax: ( )**	**E-Mail:**

Title	Name	Signature	Date

Please call the Ministry of Labour, Immigration, Training and Skills Development call centre at 1-877-202-0008.

If this is a reportable incident, please report online to:

- **Using the above information, complete the Ministry of Labour, Immigration, Training and Skills Development Form: Report of a workplace fatality, injury, illness or incident** (https://forms.mgcs.gov.on.ca/en/dataset/on00276).
  More information available at Reporting incidents and illnesses webpage (https://www.ontario.ca/page/reporting-workplace-incidents-and-illnesses#section-6)

Please send a copy of the report to:

- **Senior Specialist Ground Control, Workplace Safety North, 690 McKeown Avenue, PO Box 2050, North Bay, Ontario P1B 9P1 GCS@workplacesafetynorth.ca (Alternate address: PhilipDirige@workplacesafetynorth.ca)**

To obtain a copy of the *Guidelines for completing the Unusual Occurrence Report for Groundfall/Rockburst*, or for additional information, please contact WSN's Senior Specialist Ground Control, (705) 474-7233 GCS@workplacesafetynorth.ca