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| WSN_LogoWithTag_4CC-[Converted] | UNUSUAL OCCURRENCE REPORT FOR GROUNDFALL/ROCKBURST(UNDERGROUND MINE) |

**THIS REPORT IS FOR:** **[ ]  FALL OF GROUND** **[ ]  ROCKBURST**

## GENERAL

|  |  |
| --- | --- |
| **Company****incident code**:  | [ ]  **Internal Report** [ ]  **Reportable Incident**  (see Sect. 21 of Ontario Regulation 854)) |
| **Company**:  | **Mine**:  | **Address**:  |
| **Date**:  | [ ]  Unknown | **Time of occurrence**: [ ]  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**: Height: |  | Width: |  | Length: |  | Span: |  | [ ]  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** | From behind support (uncontained): | From unsupported ground: | Contained by support: | Total: |
| [ ]  tonnes [ ]  tons |  |  |  |  |
| **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 #1

## rock support system

|  |  |  |  |
| --- | --- | --- | --- |
| **Backfill Type** | **Location or Opening Backfilled** | **Binder Type and Content** | **Percentage Filled** |
|  |  |  |  |
| **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** |  |  |
|  |  |  |  |  |  |  |  |
| **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**: Height: |  | Width: |  | Length: |  | Span: |  | [ ]  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** | From behind support (uncontained): | From unsupported ground: | Contained by support: | Total: |
| [ ]  tonnes [ ]  tons |  |  |  |  |
| **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

|  |  |  |  |
| --- | --- | --- | --- |
| **Backfill Type** | **Location or Opening Backfilled** | **Binder Type and Content** | **Percentage Filled** |
|  |  |  |  |
| **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** |  |  |
|  |  |  |  |  |  |  |  |
| **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**: Height: |  | Width: |  | Length: |  | Span: |  | [ ]  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** | From behind support (uncontained): | From unsupported ground: | Contained by support: | Total: |
| [ ]  tonnes [ ]  tons |  |  |  |  |
| **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

|  |  |  |  |
| --- | --- | --- | --- |
| **Backfill Type** | **Location or Opening Backfilled** | **Binder Type and Content** | **Percentage Filled** |
|  |  |  |  |
| **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** |  |  |
|  |  |  |  |  |  |  |  |
| **Comments Regarding Effectiveness of Support Systems**:  |
| **Follow-up Action**:  |

## attachements

|  |
| --- |
| 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** |
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**If this is a reportable incident, please send report to:**

* **District Office, Mining Health and Safety Program, Ontario Ministry of Labour** [**Mike.Kat@ontario.ca**](Mike.Kat%40ontario.ca)
* **Ground Control Specialist, Workplace Safety North, 690 McKeown Avenue, PO Box 2050, North Bay, Ont. P1B 9P1** **GCS@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 Ground Control Specialist, (705) 474-7233** **GCS@workplacesafetynorth.ca**