Highwall Hazards

A SAFETY MOMENT BROUGHT TO YOU BY:
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What is a highwall hazard?

- Created when a miner is working near a highwall which has the potential for failure
- A highwall failure is the unintended loss of material from a highwall

People at risk include:

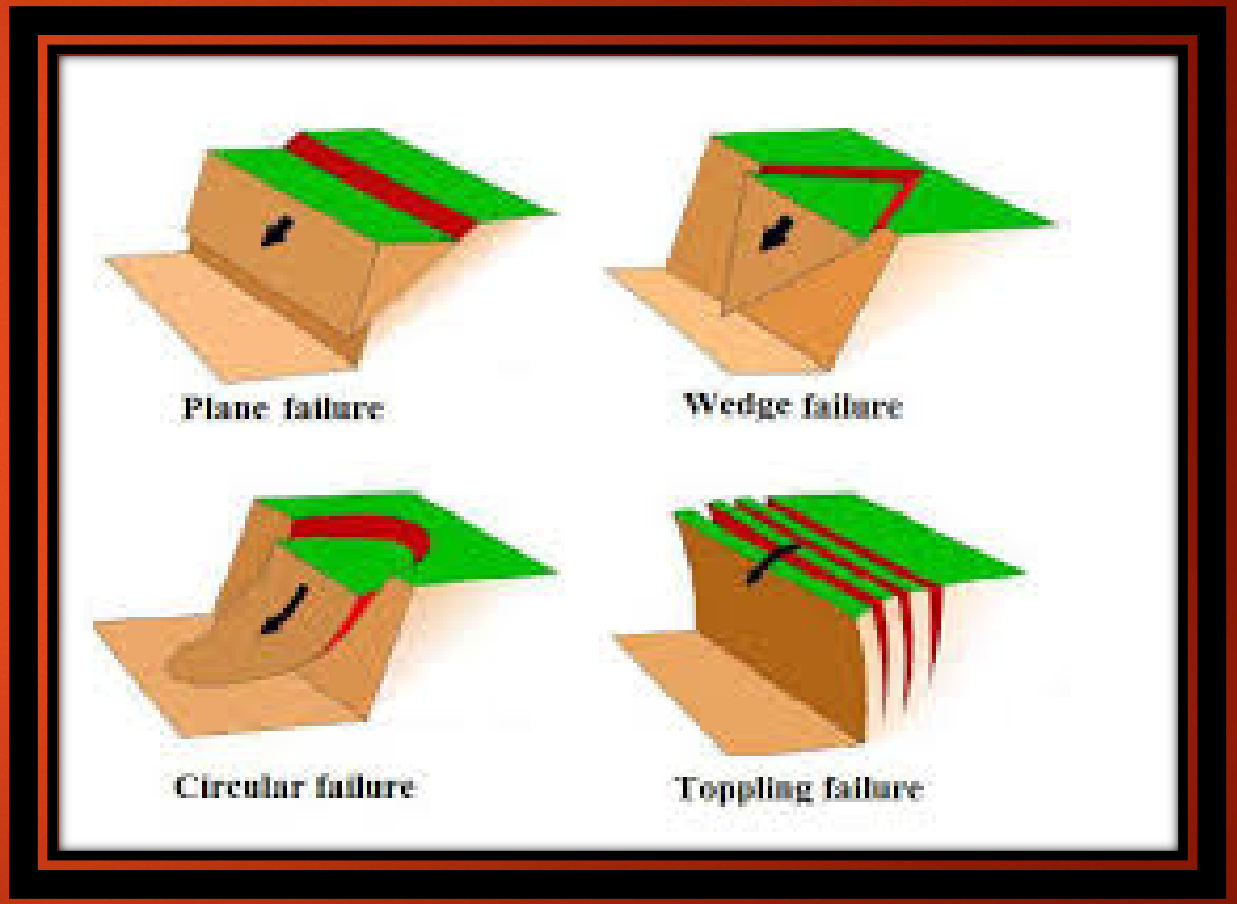
- Machine operators
- Surveyors
- Mining Engineers
- Geologists

How to recognize a potential hazard

- Look for discontinuities (structural weaknesses) in the rock along which movement and possible failure can occur
  - Bedding layers (and dip direction)
  - Joints, Faults, and Fractures
  - Seepage
    - Creates driving force in joints
    - Adds weight to the [potential] sliding mass
    - Erodes supporting material
  - Ice (freeze/thaw cycles)
  - Large blocks of rocks protruding from wall (rock fall hazard)

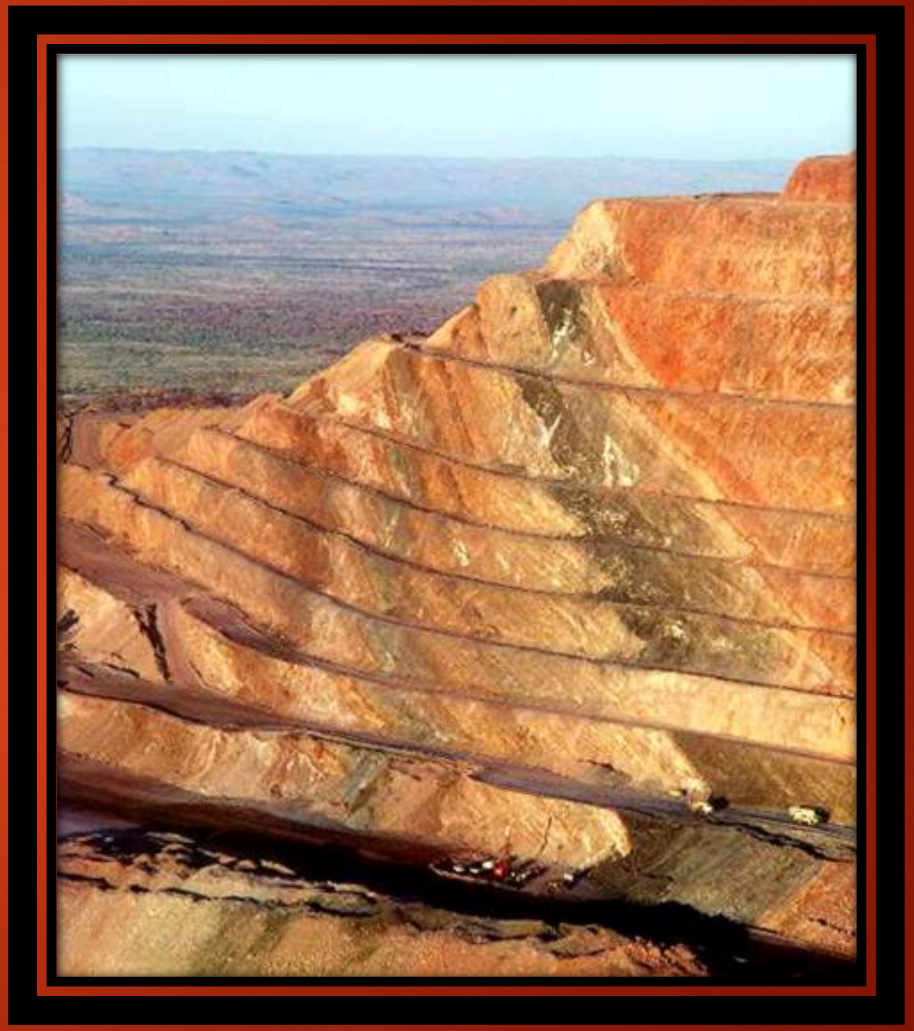
Recognition of a potential hazard (cont)

- Hazards are not only limited to miners working beneath a highwall
- Discontinuities not only contribute to rock falls (individual rocks on a small portion of a highwall), but also to rock mass failures (involve a large amount of material on a large scale).
- Rock mass failure modes include:
  - Planar (sliding movement along a single discontinuity)
  - Wedge (sliding movement along two intersecting discontinuities)
  - Toppling (buckling of a slab)
  - Circular (sliding movement along a failure surface that occurs along multiple discontinuities)



Staying Safe

- A Mine will have precautionary measures
  - Strictly enforced rules
  - Berms
  - Slope spotting
  - Slope Monitoring with Instruments
- A general rule:
  - If a single bench has a height of 50 ft , always stay 50 ft from the wall (no exception!)
  - If a double bench has a height of 100ft, always stay 100 ft from the wall (no exception!)
  - If you notice any movement, or spot a notable discontinuity – report it to a superior immediately.
  - Don’t pick up the rocks along the wall, regardless of how pretty they are



Thank you!