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BLUE MOUNTAINS CUTTINGS
Geotechnical Hazard Assessment

Cutting Details

- 1.5km long
- Maximum 65m high
- Series of cuts, steeply sloping natural slopes and benches
- Hawkesbury Sandstone
- Over 90 years old

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Background

- Rock Fall from lower cut - blocked Up track
- Noticed by driver on Down track.
- 1 tonne rock could not be moved from track by driver
- Area previously assessed from **track level** by geotechnical engineer and no hazard identified

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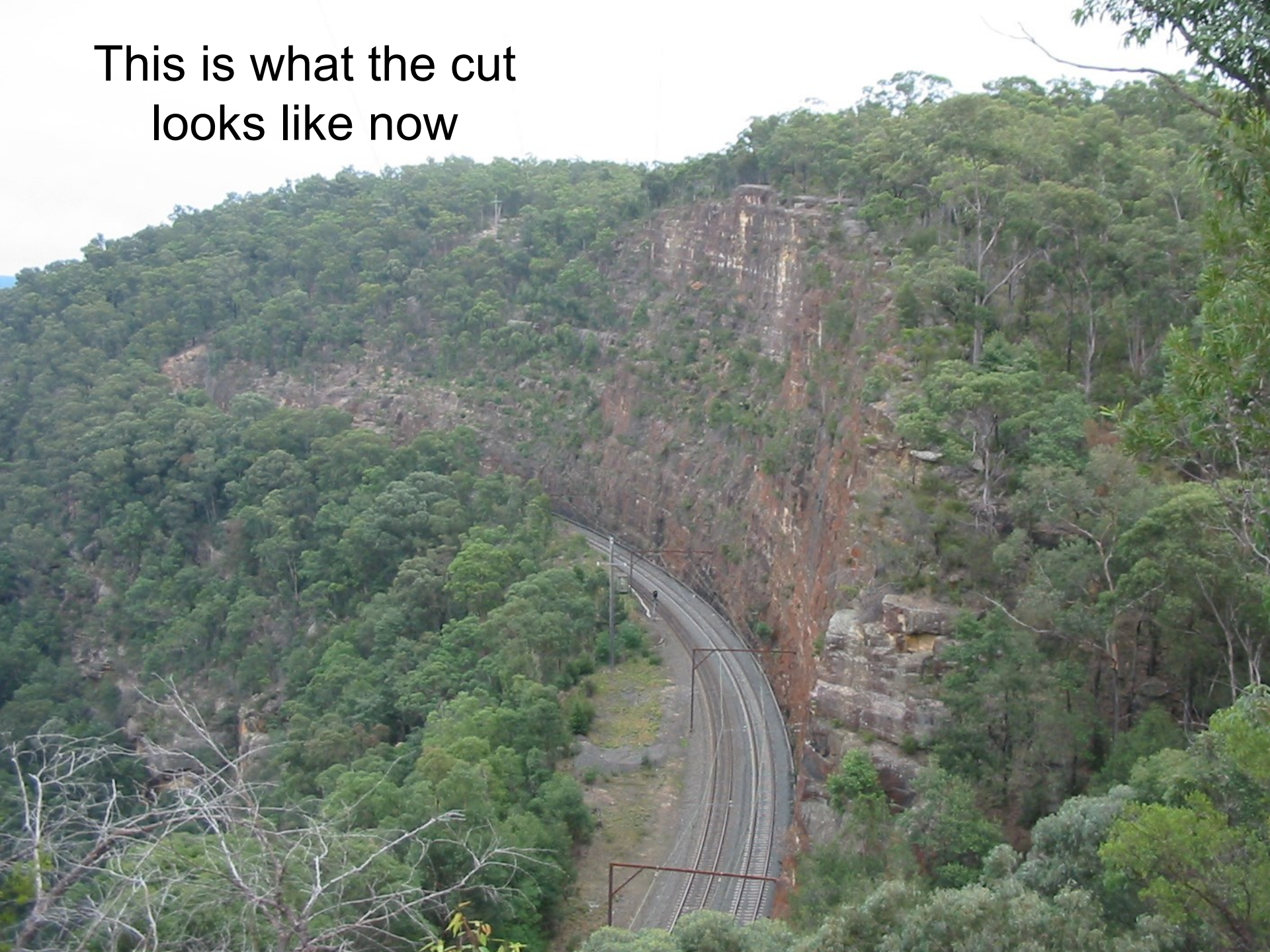
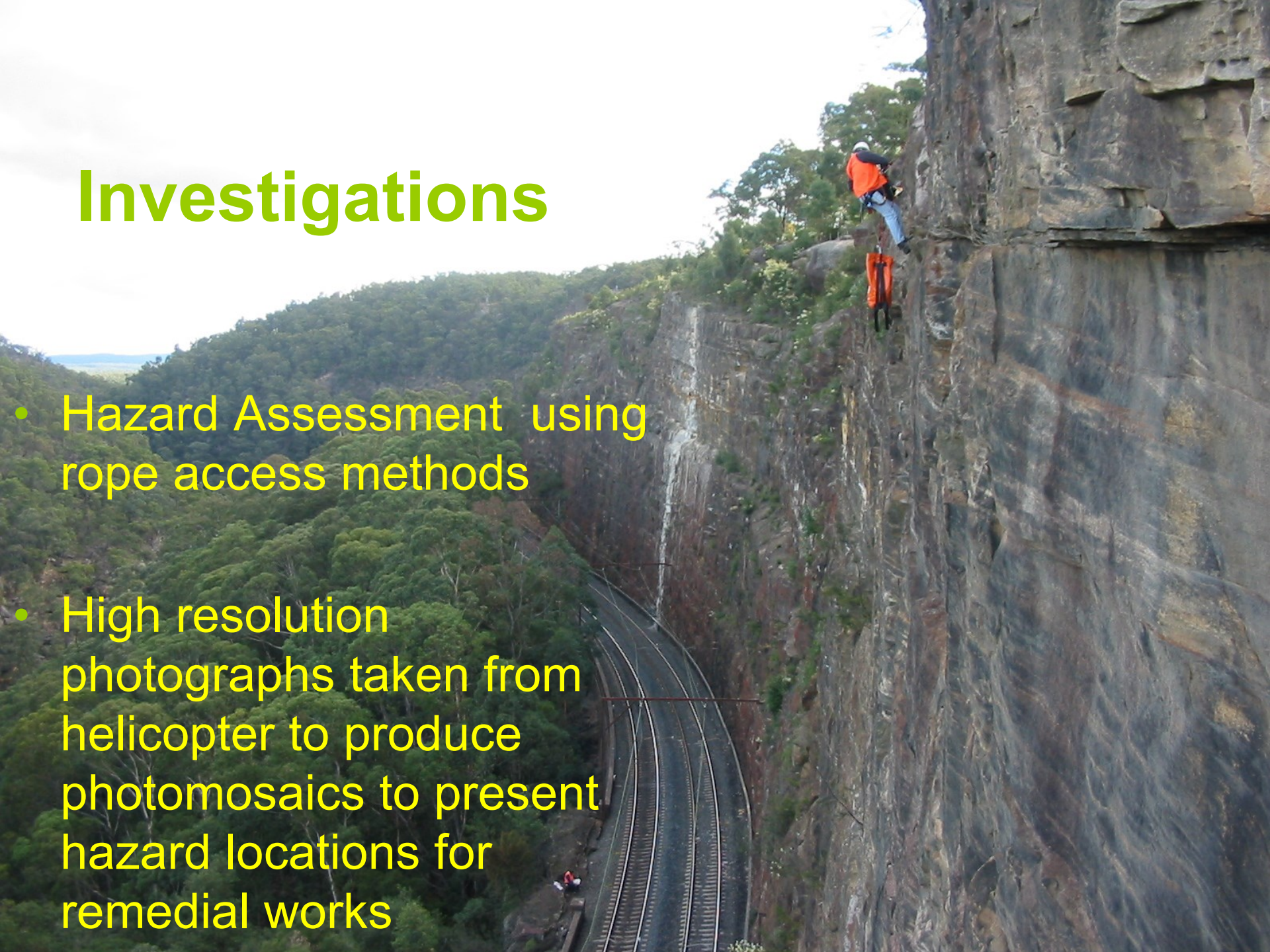
LL 300 kg
Rock Fall Scarp


This is what the cut
looked like in about
1920

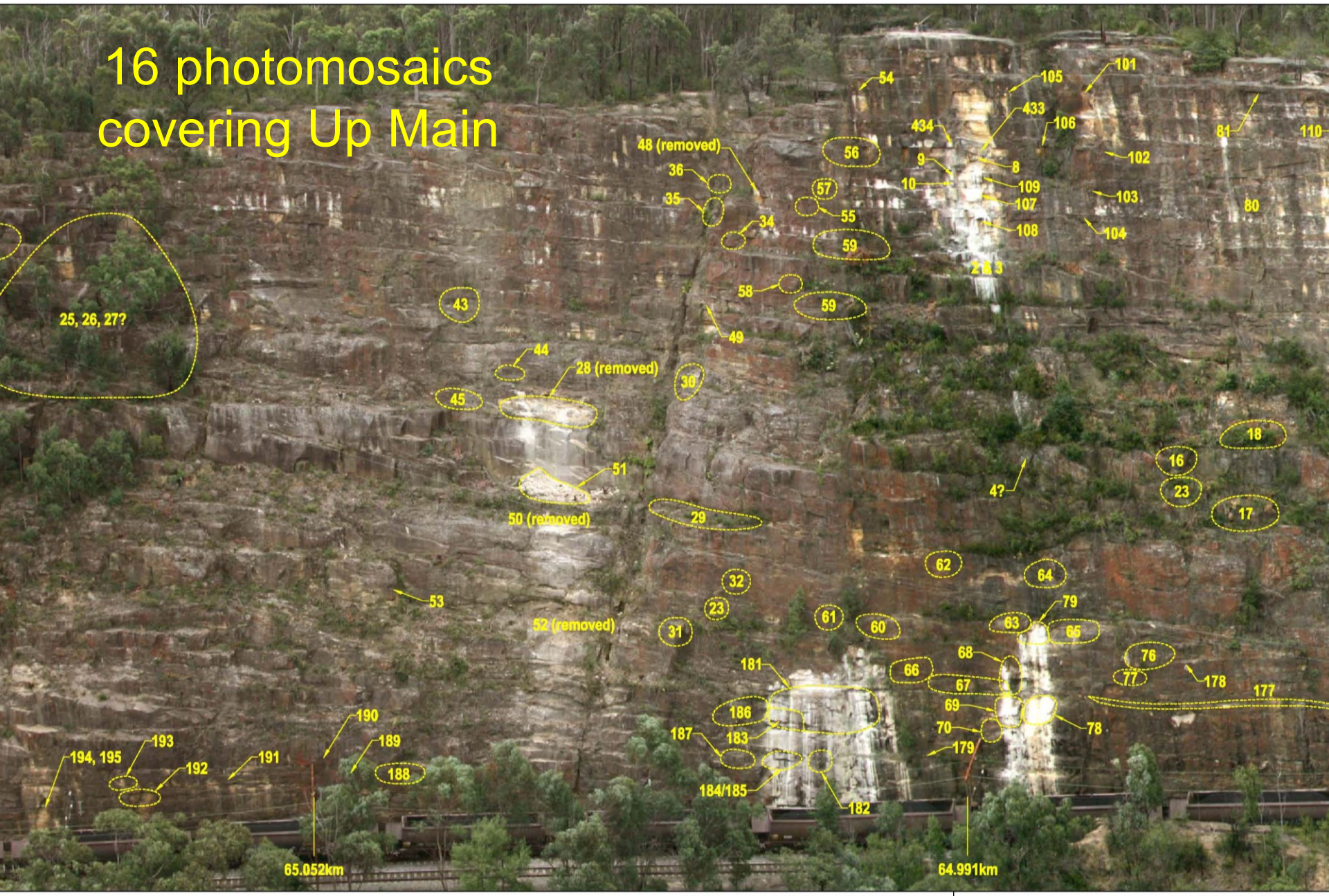
This is what the cut looks like now



Investigations



- Hazard Assessment using rope access methods
- High resolution photographs taken from helicopter to produce photomosaics to present hazard locations for remedial works



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Revision	Description	Drawn	Approved	Date

Drawn	MH/AH/SW
Approved	
Date	
Scale	NTS

RAILCORP
RAIL CUTTING STABILITY ASSESSMENT
LAPSTONE RAIL CUTTING
CUTTING UP MAIN 64.790 - 65.251km
HAZARD LOCATION PLAN - SHEET 3 OF 5

FIGURE 7.3

Job no. S22540/1

Rock Fall while on site

- While assessments being carried out
- During rainfall

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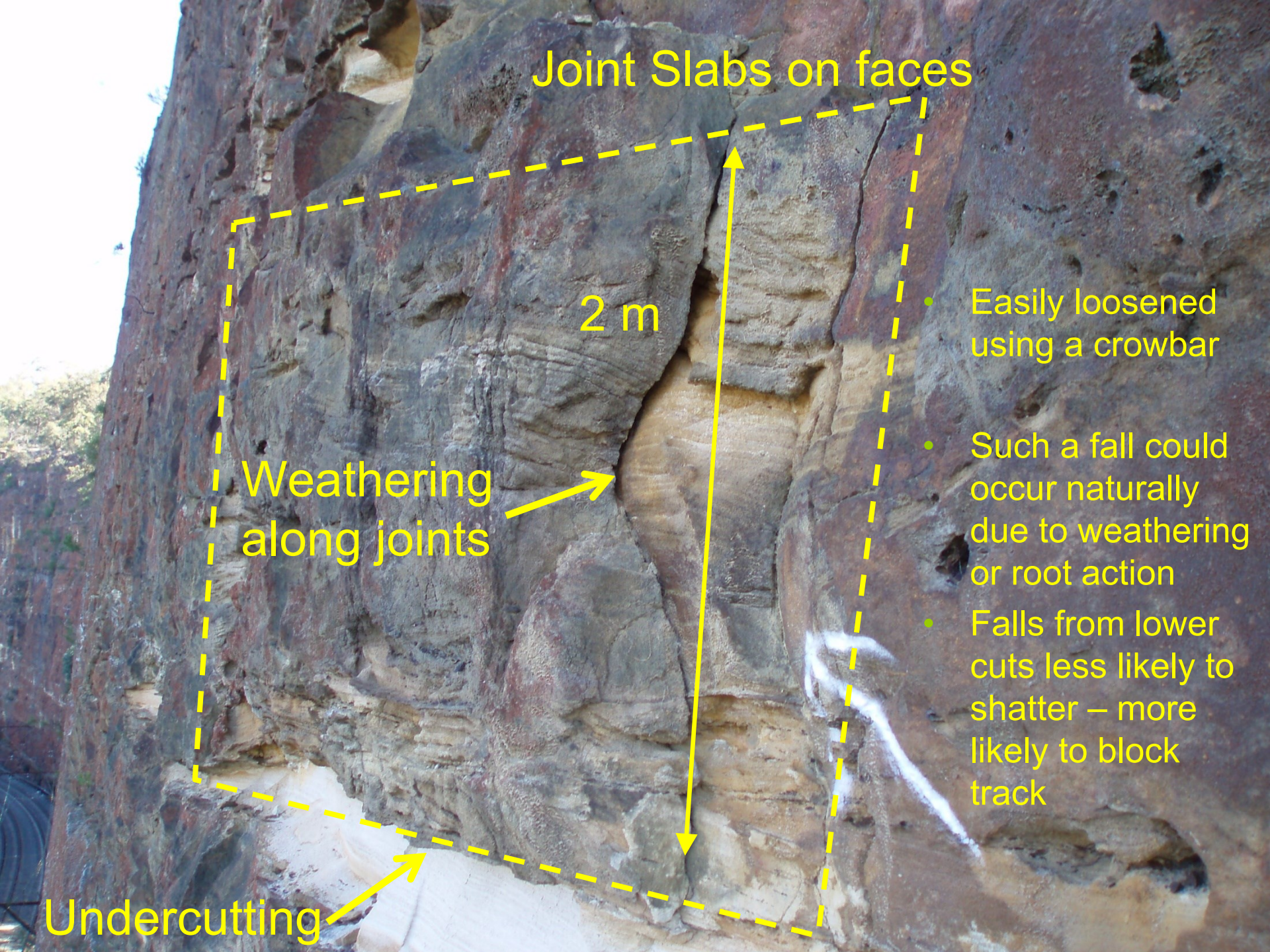
Rock shattered on impact
with fragments ending up
on rail corridor

What is causing these hazards?

- Age of the cuts
- Weathering of rock – significant onion skin weathering noted
- Vegetation – root jacking
- Drought – sending roots deeper and swelling after rainfall events


Rock falls caused by
root jacking near crest


Joint Slabs on faces
2 m
Weathering along joints
Undercutting
Easily loosened using a crowbar
Such a fall could occur naturally due to weathering or root action
Falls from lower cuts less likely to shatter – more likely to block track

Results

- Over 400 hazards identified
- 488 locations for rock bolts recommended
- Produced clear photomosaics showing hazards and planned remedial works.
- High risk hazards prioritised for treatment by scaling and rock bolting.


Extensive damage to overhead wiring stanchion during scaling


Extensive damage to
wiring trough