Appin Colliery

MG703 Outburst Presentation

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Gas and Outburst Seminar
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This presentation summarises the outburst event in MG703 panel. The data and information presented is an approximate account of that event.

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Appin Area 7 - Background

Numerous Thrust Faults
Appin – LW703 Geology
MG703 Panel Setup – remote mining

Remote Operating Station

FAB

S/C and CM

LW703

Remote mining “Restricted Zone”
Summary of the Event

• N/S Crew started cutting out for 3rd strap for the evening – approx 3:20am and 74m I/b C/T
• As soon as drum started to cut the face large pressure bump noises (normal)
• Minor gas release pause in cutting
• Resume cutting more banging and gas release
• Stopped cutting left conveyor running.
• Rumblings for 30 to 45 seconds then big bang.
• All face power and fan tripped automatically.
• No personnel were directly exposed to the energy release.
Location of Outburst – MG703
- Restricted Zone inbye ROS
Investigation & Recovery of the Outburst

- The Remote Mining method followed by the crew protected them from the outburst energy release.
- The Remote Mining Authority to Mine (ATM) was immediately suspended pending a full investigation and development of a recovery plan.
- The area was inspected by the Outburst Risk Review (ORR) Team and DPI & Check Inspectors.
- Outburst risk review team completed initial investigation - reviewed remote mining procedures and developed a recovery plan.
- Everyone onsite was given a start of shift presentation on the event.
- All Development crews were briefed in the recovery plan prior to restarting operations.
- The outcomes of this event have confirmed the remote mining method as the safest means to mine in above outburst threshold areas.
Recovery Plan Summary

- Communication briefing to MG703 development crews
- Meggered the S/C and CM Cables.
- Purged Flameproof enclosures.
- Carried out Electrical code inspections on both S/C and CM.
- Powered and removed S/C
- All CM movements where carried out remotely under remote mining procedures.
- CM pulled back and inspected for damage & repair
Investigation – Data collection

- Gas bag samples of the atmosphere at the face.
- Coal from S/C and head of CM placed into Gas Bomb.
- Collected real time history data from all gas monitoring points.
- Once restarted counted S/cars (calculation of tonnes)
- Once developed extended past site – Drilled core holes either side of the heading and took 5 and 10m cores.
  - (could not drill out any further – plan was 5, 10, 15, 20, 25m cores).
- Extensive photographs at all stages.
Information recorded after the outburst

- It took 6 hours to degas the heading to gain access to the face – Centre line brattice erected prior to fan starting.

- On safe inspection of the face the ABM20, with canopy set to the roof, had been pushed back approximately 500mm.

- The maximum percentage of methane recorded in the panel return was 1.5%.

- The face position was 74m inbye B 18Line, (Approx 50m into boggy zone)

- There were no recorded increased gas levels detected in A Hdg (as recorded by the real-time monitor at 18A Hdg).
Information recorded after the outburst

- Total quantity of gas released estimated at 1100 m$^3$. (approx 97% CH$_4$ – 3% CO$_2$ - traces of Ethane)
- Approximate tonnes 150 to 200 tonnes.
- Outburst occurred on a thrust fault.
- Drill hole gas cores collected ranged from 10 to 14 m$^3$/t
- Face coal sample (part Q$_2$ and Q$_3$) content – 8.4 m$^3$/t
Outburst signs

- **Sign Present before Outburst occurred**
  - Ribs hardened – vertical – no slumping
  - Reddish tinge throughout coal (movement on joints)
  - Slickenslides
  - Noise - Bumping

- **Additional Signs following Outburst**
  - Large thrust fault.
  - More evidence of slickenslides.
  - Large amount of Mylonite
  - Some Water Drippers
  - Large void in RHS Rib.
  - Fine powdery coal
RHS of ABM looking towards face void

- Reddish Tinge on coal
- Roof mesh bent back trapping coal against TRS
- Outburst originated from RHS void approx 5 -10m ahead of face and 1 to 1.5m into the rib
- 1 to 1.5m
CM pushed back nominally 500mm – Canopy set to roof
LHS of ABM – Mesh bent back trapping coal against TRS
LHS behind Mesh looking into void

Last cut marks in roof

Void extends on LHS another 2 to 3 metres past last cut marks
RHS ABM – Coal thrown back covering platform
RHS of ABM – Coal back over bolting station
RHS of Shuttle car – pushed back

- Minimal coal from outburst next to car
- Pile of coal pushed in front of outbye end of wheel
Outburst Void RHS – Once coal loaded out
Outburst Void RHS – Once coal loaded out
Bottom part of outburst – Shiny Slickenslides
Thrust Fault – Approx 0.5m vertical displacement.
Thrust Faults
Sandstone Floaters.
The End

Questions / Comments