

SOUTHLAND COLLIERY

Summary of Operations

Since Thiess Appointment



Outline of Presentation

- Mine Plan
- Objectives
- Milestones 2001
- Milestones 2002
- Recent Problems
- Contributing Factors
- Actions Taken
- Outlook

Objectives

- Safety
 - Aim is to be seen as industry best practice
 - Actual performance has been excellent
 - +390 days LTI free
 - 12MMA LTIFR zero
- Environment
 - Developing excellent relationship with regulators
 - Strong community stakeholder communication process

Objectives

- People
 - Highly motivated & skilled employees
 - Direct & open relationship with workforce
 - Clean industrial record
- Production
 - Target is > 2.0M tpa, 180ktpm
- Costs
 - Target is <\$40/t (FOB), @ 180ktpm

Milestones 2001

- March - Contract signed & Thiess commenced remedial operation
- April- remediation completed , production start
- May – First development coal
- August - Leading edge enterprise agreement
- August - SL2 Part A completed – 479,000t
- September - Development mastered
- October - SL2 Part B development completed
- October - Slant Road filled & infrastructure relocation
- October - SL2 Part B commenced

Milestones 2002

- May – Reduced from 4 CMs to 2
- June – SL2 Part B complete 616,000 t
- June / July – Longwall move to SL3,
- Major infrastructure upgrade
- August – SL3 production commenced
- November – Alliance Agreement brought forward
- December – Major longwall maintenance program
- December – Reduced from 2 CMs to 1

Milestones – an integrated team Southland / Thiess Alliance

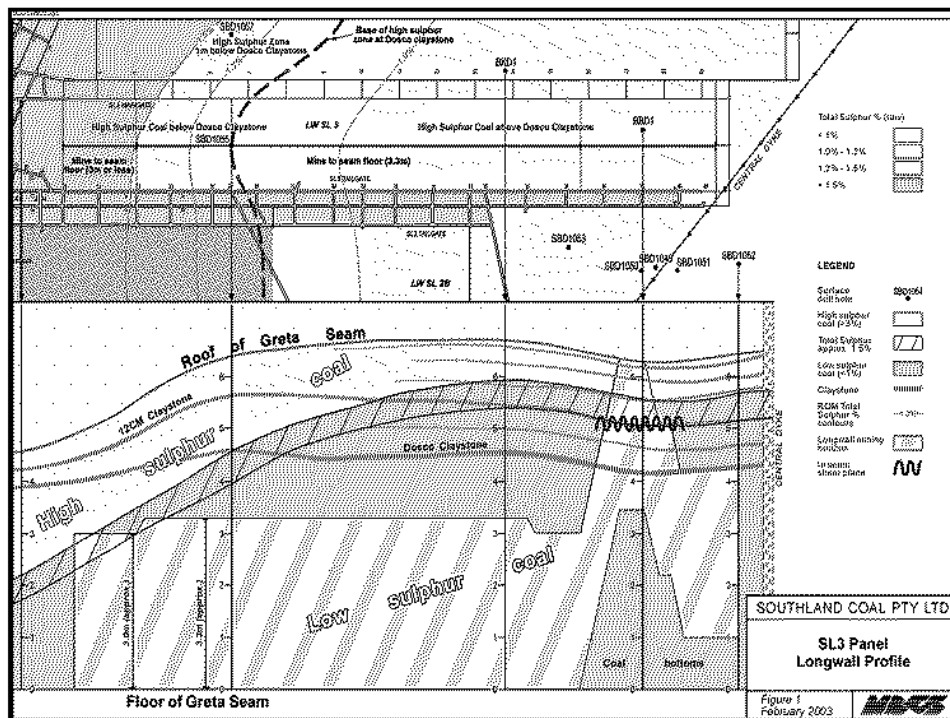
- Is not a “cost plus” nor schedule of rates arrangement
- Deliverables determined by Alliance Leadership Team
- Fee structure to Thiess is based on;
 - Reimbursement of defined direct costs
 - Recovery of predetermined overheads not linked to direct costs incurred
 - A gain share payment determined by reference to performance against predetermined KPI's
- Teams integrated & focussed on results not variations

Milestones 2003 to date

- January – Grading down to seam floor
- January – Rocsil foam approved
- February – Longwall at base of seam
- February – Revised roster implemented
- February – Production has recommenced

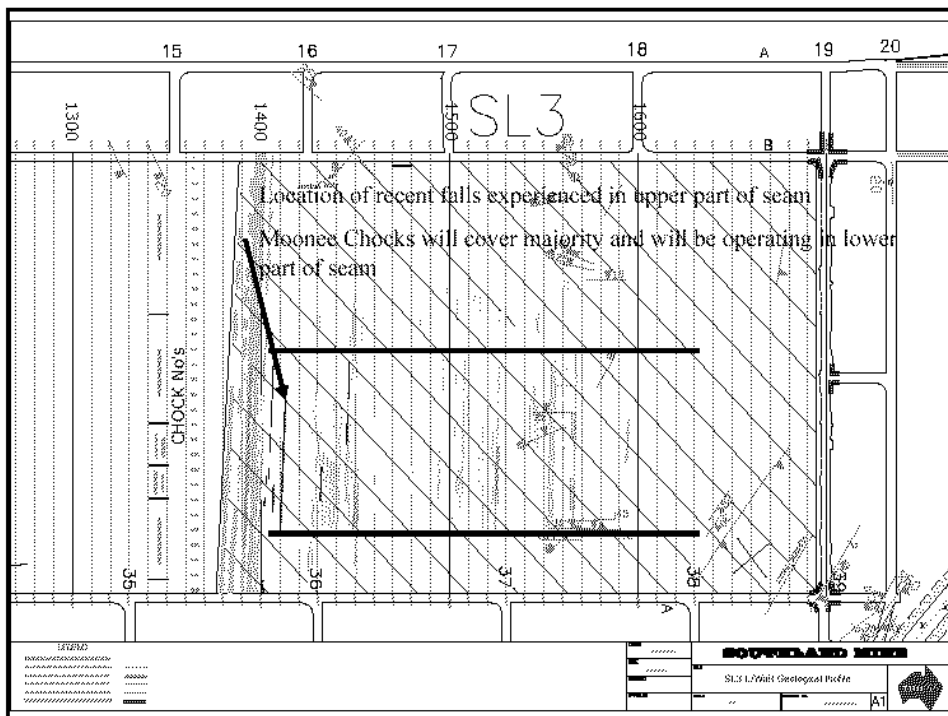
Contributing factors to recent production difficulties

- Longwall Position in seam
- Seam Geology in Upper Seam section
- Elevated stress field / first panel
- Initial abutment load
- In-seam shear
- Non-continuous Production
 - Westphalia chocks portion of longwall
 - Flippers and hydraulics critical for 1st time in decade



SL3 extraction well below expectations

- Extraction difficulties due to:
 - Localised geology & stress
 - Heavily banded coal in upper portion of 7 metre seam
 - Soft laminated immediate roof at top of seam
 - Square block abutment loading
- Roof did not hold. Substantial cavities were being formed above the Dosco, upper half of seam.
 - Pumped approximately 2000 m³ of Hydra Foam between Aug 02 and Jan 03



Previous roster prevented continuous longwall operation

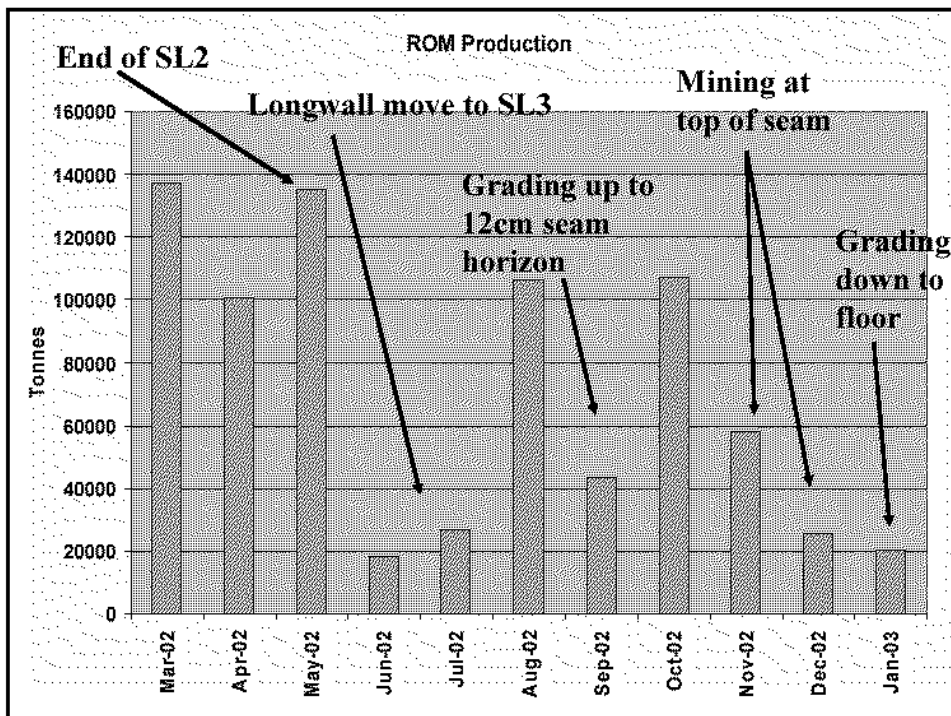
- Back to back 12 hr shifts did not provide a hot seat change
- Wall was stationary for up to 14 hours (Friday to Sunday roster)
- Historically, longwall was not a bottleneck
- In these conditions we needed continuous longwall operation

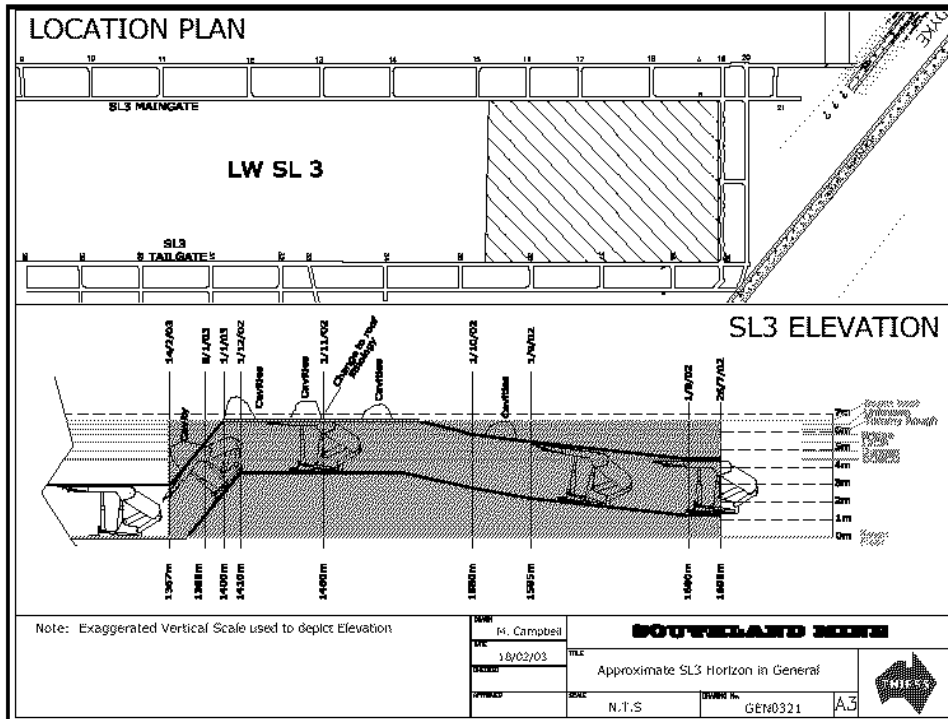
Failure Mechanisms Observed

1. **Normal operating mechanism**
 - Face slabbing or roof spall controlled by normal operation and progression of mining
 2. **Stage 2**
 - Requires PUR injection to remediation
 3. **Stage 3**
 - Requires void filling capacity in conjunction with PUR remediation
- 33 production shifts were lost due to Stage 3

Longwall Unit Mechanical Issues Westphalia Chocks – weak link

- Longwall supports adequate historically
- But these conditions exposed weakest links
- Bank of 11 Westphalia chocks , 30 metres
- Roof canopies 1.1m shorter than standard
- Old chocks with poor geometry
- Failures bias around Westfalias, 100 metres





Actions taken

- Continuous cutting ability – Rosters changed
- Operating procedures - Strata Response
- New filling method introduced - Rocsil
- Mechanical - Face hydraulic pressure boost
- Mechanical - Flippers
- Now on floor - Coal Beam (plus 1m)

Increased Uptime

- Was 11 x 12 hours shift @ 5.3 hours per shift uptime
- 58.3 Hours of production per week
- Now 17 production shifts per week
 - Combination of 10 and 12 hour shifts
- 68.8 hours of uptime production
- **18% increase in uptime production** due to shift arrangements
- **Increased production time reduces the opportunity of face deterioration**

Hydra Foam replaced with Rocsil for cavity filling

- Approval granted in January to use Rocsil.
- 33 productions shifts utilised in pumping Hydra Foam before approval, which could have been covered with 3.5 shifts of Rocsil pumping
- Rocsil is 10 times quicker to install in-situ

Additional Rocsil advantages

- Quicker application time
 - This innovative approach to remedial work reduces down time
 - 1 shift to fill void compared to 10 shifts with hydra foam.

PUR improvements

- Staged pumping now in place resulting in reduced labour and time
- Compressed air system optimised
 - Manage more MBS units on face (up to 4)
 - Leading to faster PUR injection times

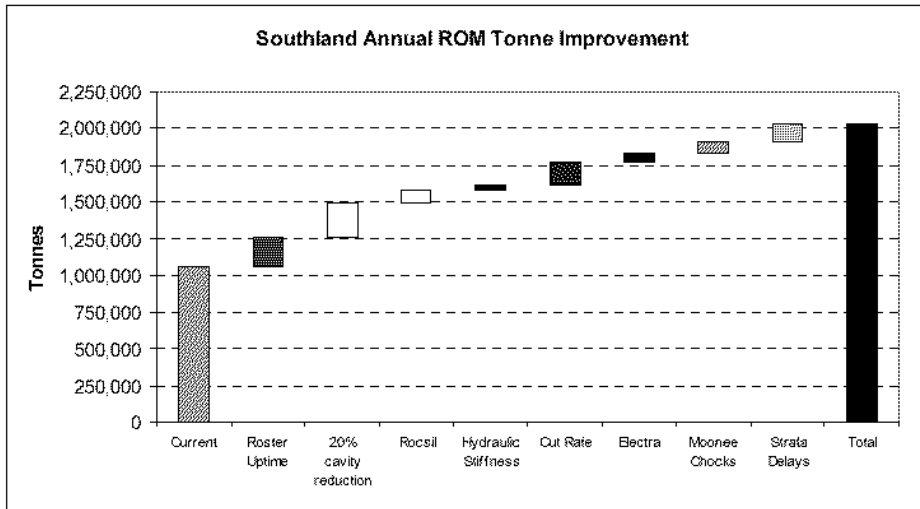
Hydraulic improvements

- Flipper repairs completed
- Leg replacement program intensified
- Change out of relay bars
- Hydraulic booster pump installed

Location within the seam

- Got back on to the floor because
 - Modelling and advice by industry experts
 - Actual Roof Behavior Experienced
 - Potential safety incidents to be avoided
 - Obvious poor production volume and quality
 - Expect significant reduction in roof cavity failure

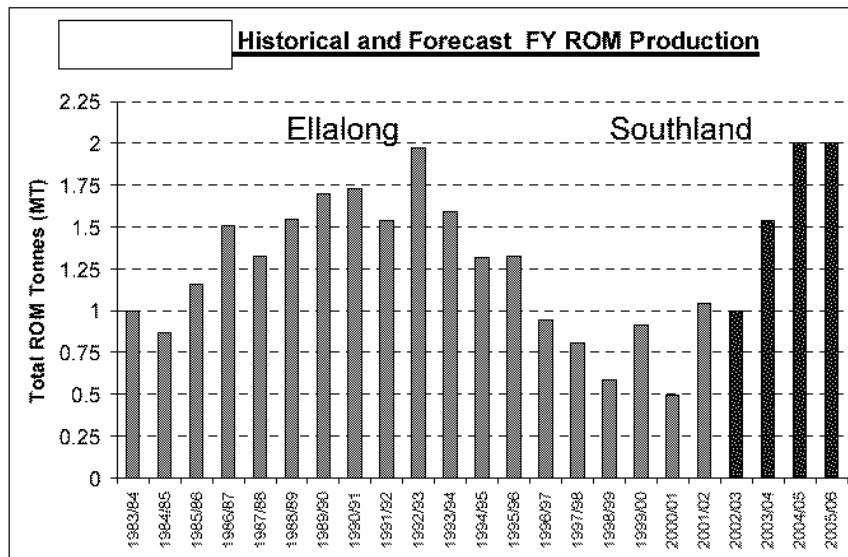
Achieving target production



Other system modifications

- Improved development rate allowed reduction from 4 continuous miners to 1
- Improved belt system, transfer point upgrades
- Shearer improvements pending
- Ventilation Improvements
- Refined Management Systems
- Geological hazard mapping
- Geotechnical modeling

Production Outlook



Summary of operational changes

- **Increased production time** per week (+18%)
- **Rocsil** void filler now available
- **Increased chock operating pressure** 10 to 15 Bar across face with booster pump
- **Improved longwall support capacity** 10 – 15 %
- **Reduced cycle time** between shears (cutting runs)
- Greater operational knowledge & experience in Greta seam
- **Moonee Chocks** to be installed into longwall SL4. Current weakest part of longwall unit will become our strongest