



A&I - IMPROVING THE WAY OF WORKING

Improving and empowering all employees and systems are a daily priority at Sishen mine. Evaluating and revising systems and ways of working are constantly being done and many programmes have been put in place to monitor the old and the new and see what works and what not. One such a programme is Analyse and Improve (A&I) that is a component of the Business Process Framework (BPF), Sishen's new way of working. A&I is a series of steps that allow improvements to be made to any part of the business. There are different types of improvement applications, however, each varying in its complexity and rigor required. The teams had their close-out session on 4 February to evaluate the teams' overall progress, if their goals were achieved and if targets were met.

Within the programme three teams were identified to evaluate and improve their current ways of working. These teams were:

DETERMINATORS

Goal: Improve the Pre-Strip Drilling compliance to Schedule (Target: Volume compliance to 100%, Spatial Compliance to 80%)



DESIGNATION	NAME
Team leader:	Andy Rose
Drilling specialist	Stephen Mpanamana
Drilling foreman	Nametso Kgarane
Drill operator	Ace Mahlangu
Pre-strip block planner	James Botha
Block prep	Bennie Cloete
Alpha representative	Peter Mcquire
BI specialist	Marten Reinders

Andy Rose led the presentation on behalf of the Determinators.

BIG MAMAS

Goal: Improve cycle time from an average of 45.9 minutes to 41.6 minutes (Range between 44.1 & 39.2)



DESIGNATION	NAME
Mine overseer	Deon Le Roux
Senior mine planner	James Botha
Acting mine overseer	Norman Jannetjies
Acting chief mine surveyor	Org Nieuwoudt
Haul truck operator	Bradwen Juries
Dozer 475 operator	Kosie Engelbreght
Contractor manager	Nathi Nzimande
Dispatch	Jannie Coetzee
Consultant	Jerry
Shovel operator	Khalalelo Seclare
Reliability engineer	Ivan Abrahams
Alpha facilitator	Otto De Wee

Johan Mans from Big Mamas did their team's presentation.

MANYORA

Goal: Improve the reliability philosophy and planned/unplanned maintenance ratio from 10:90 to 40:60



DESIGNATION	NAME
Foreman – drilling A	Eddie Meyer
Foreman – drilling D	Ernest Modise
Master lube fitter A	Harwich Breytenbach
Master fitter C	Dominic Engelbrecht
GES planning	Willie Lubbe
Planner	Cornelius du Plessis
Artisan B	Martin le Roux
MRP controller	Gerhard Matthee
Anglo strategy consultant	Charles Howard
OEM Atlas Copco	Christiaan van den Heever
Reliability engineer	Ivan Abrahams

Eddie Meyer represented the Manyora team when he presented their A&I presentation.

These three teams gave daily and weekly feedback that is part of a comprehensive communication plan to ensure updates on progress were made:

- The daily graphs were published on electronic notice boards throughout the mine and also distributed mine-wide via email every Friday.
- Weekly updates were given at various mining TIP reviews.
- 100 Day close-out review (gave during the close-out session on 4 February)

RESULTS

DETERMINATORS	BIG MAMAS	MANYORA's
• Volume compliance improved with 65%, hence 21% metres drilled improvement • Spatial compliance improved with 15% improvement, subject to performance improve the next few days • Wait for Drill block improved with 110% , hence internal drill were also given drill space • Shovel Dig rate variability reduced significant, due to better fragmentation	• Overall reduction on 7.7% in cycle time (as shown on control chart) • Improvement in cycle time for most of the components of the cycle time cycle (shown in control charts) • Reduction in cycle time also identified as a Kumba@80 cost saving initiative • Stable Pre-Strip waste performance (Pre-Strip already in BPF mode)	• Unplanned maintenance decreased by 18% from August to December 14 • Average maintenance availability improved by 5.2% from September to December 14 • We also improved collaboration in our team • May month planned vs unplanned was 10% vs 90% • Target improvement: Planned-40% & Unplanned-60% • Average: Planned-35% & Unplanned-65% from October to December 14

The greatest achievement any employee can receive from programmes that incorporate each individual's skill and knowledge is learning from it. These are but a few lessons the teams learned through the A&I process:

- "Rework is costly, so do the work right the first time"
- "The biggest lesson learned is the importance of communication with the team. Communicating a single task to all team members enabled us to work better as a team."
- "We also learned to challenge our current practices for example by not going to the Lube bay for re-fuelling, we were able to optimise production. Thus, always look for ways to improve conditions."
- "We have learned more about problem solving, especially with the downward trend in maintenance availability from 88% to 77.5% in three months."
- "People skills are very important. It makes engaging and communicating with people more effective."
- "Doing your part and be willing to help others, will make the job easier for the whole team."