MOSH DUST NEWSLETTER

JANUARY 2026

MINERALS COUNCIL SOUTH AFRICA

MINING INDUSTRY OCCUPATIONAL SAFETY & HEALTH

Anglo American Coal – Khwezela

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5 **SASOL Mining's Groundbreaking Project To Protect Workers Against Occupational Lung Diseases**

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01 A Decade of Progress: Dust Occupational Health (OH) Milestone Performance [2014 - 2024]

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Overview

The South African Mining Industry continues its commitment to eliminate occupational lung diseases (OLDs) by setting stringent dust OH Milestones. This provides a summary of the performance against the 2014 Occupational Health Milestone and the new journey towards achieving the 2024 OH Milestones.

Recap

2014 OH Milestones

Elimination of occupational lung diseases through: Reduction of overexposure to dust

- By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05 mg/m³ for respirable crystalline silica (RCS) (These results are individual readings and not average results).
- By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable coal dust particulate of 1.5 mg/m³ (These results are individual readings and not average results).
- By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable platinum dust particulate of 1.5 mg/m³ (These results are individual readings and not average results).

Elimination of occupational lung diseases/pneumoconiosis

- Using the present diagnostic technique, no case of pneumoconiosis will occur amongst previously unexposed individuals ("Previously unexposed individuals" are those unexposed to mining dust prior to December 2008, i.e., Equivalent to a new person who entered the industry by January 2009")

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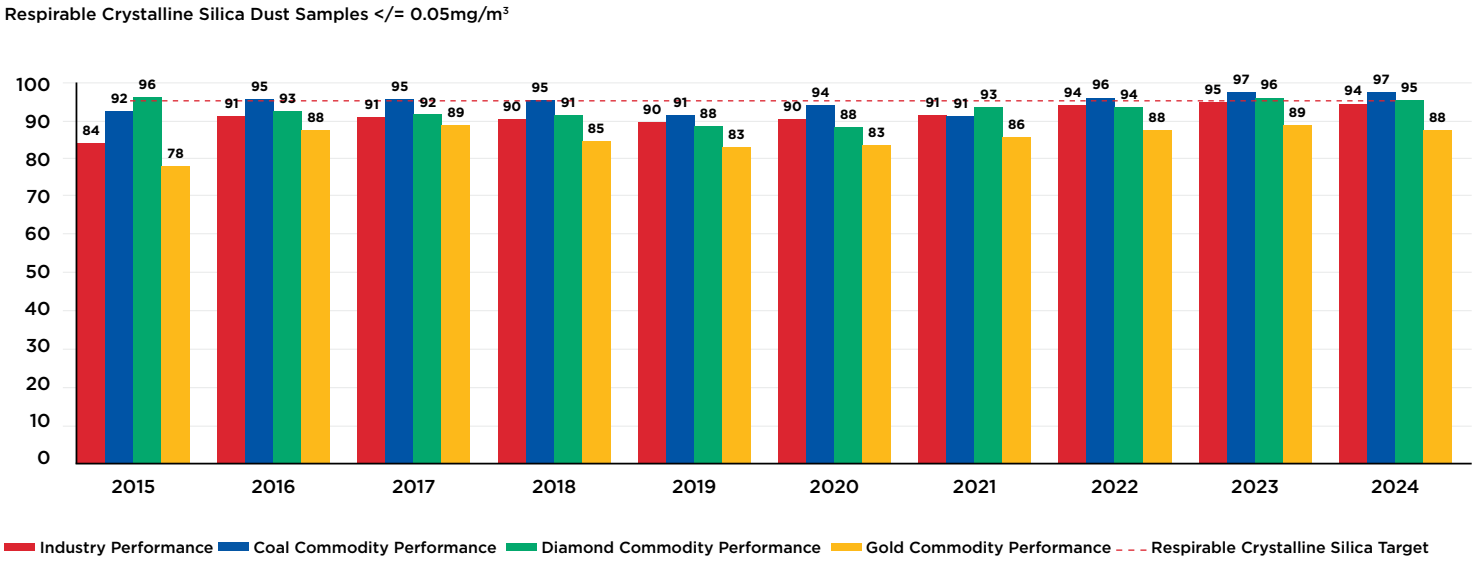
2014 OH Milestones

Industry Performance on Respirable Crystalline Silica Dust per Commodity



The Industry performance on respirable crystalline silica dust improved significantly over the review period. Although the significant improvement was observed, the industry narrowly missed the 95% target at the close of the 2014 milestone year. Other commodities such as Iron Ore, Coal and Diamond achieved the milestone target of 95% by the end of the milestone year 2024, demonstrating consistent improvement and alignment with industry expectations. In contrast, the Gold Commodity recorded the lowest performance in industry. The performance frequently remained below the 95% milestone target and consistently recorded under 90% reflecting a lagging trend compared to other commodities.

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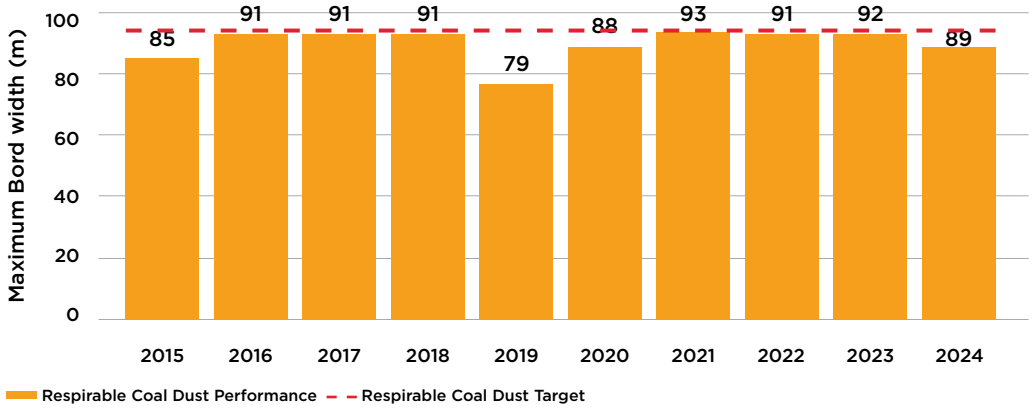
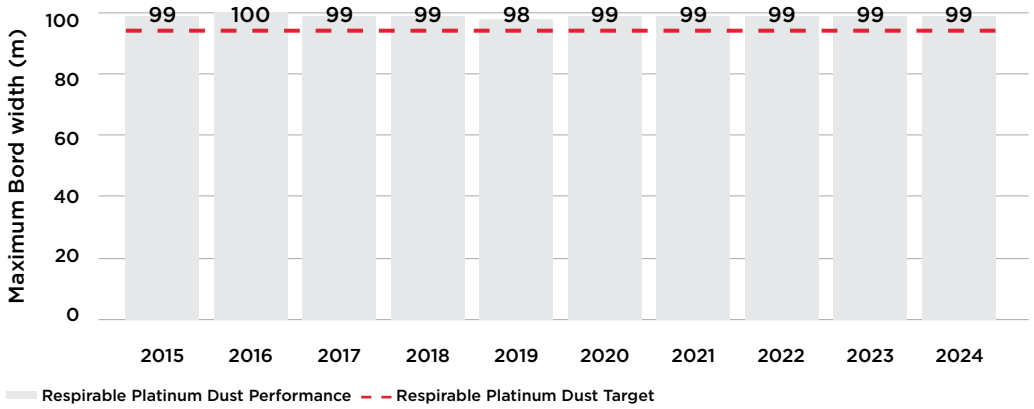
Coal Dust Samples ≤ 1,5 mg/m3



The overall respirable coal dust performance for the period 2015 to 2024 is below the milestone target. The improvement observed is relatively minor at 4% with 85% of dust samples below 1.5mg/m3 in 2015 and only 89% by the end of the milestone year 2024.

Respirable Platinum Mine Dust Sample ≤ 1,5 mg/m³



The respirable platinum dust performance is at a record 99% of dust samples below the milestone target of 1.5mg/m3. The platinum commodity has achieved the 2014 milestone reflecting sustained dust control efforts.

Key Factors Affecting OH Milestone Performance

1. **Poor Adoption of MOSH Leading Practices & Dust Initiatives**
2. **Inadequate support from Senior Management for Dust Control Initiatives**
3. **Poor maintenance of current dust engineering controls and sytems**
4. **Inadequate performance monitoring of dust controls**
   (availability, efficiency & effectiveness)
5. **Poor employee behaviors towards dust controls & system**
   (non-adherence to standards and procedures)
6. **Inadequate supervisory systems on dust controls aspects**

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2024

OH Milestones

The 2024 Occupational Health and Safety (OHS) Summit represented a significant tightening of the 2014 OH Milestone. The South African mining industry is committed to ambitious milestones aimed at reducing occupational exposure to respirable crystalline silica (RCS) and eliminating occupational lung diseases.
The following OH Milestones were adopted in 2024:

Elimination of occupational lung diseases through: Reduction of overexposure to dust

- By December 2034, 95% of all exposure measurement results will be below the limit of 0.03mg/m^3 for respirable crystalline silica dust.
- By December 2034, 95% of all exposure measurement results will be below the limit of 1.25mg/m^3 for respirable coal dust.
- By December 2034, 95% of all exposure measurement results will be below the limit of 1.0mg/m^3 for respirable platinum mine dust

Elimination of occupational lung diseases/pneumoconiosis

- By December 2034, using current diagnostic techniques, no novice pneumoconiosis cases of; silicosis, coal worker's pneumoconiosis, and pneumoconiosis as a result of respirable platinum mine dust will occur amongst previously unexposed individuals. ("Previously unexposed individuals" are those unexposed to mining dust prior to December 2024 i.e. Equivalent to a new person who entered the industry in January 2025")

Conclusion

In conclusion, while progress has been made in certain commodities, the overall performance indicates uneven advancement towards the Occupational Health Milestones. A deliberate shift towards proactive risk based dust management and consistent implementation of proven controls is essential. Through focus leadership, innovation and shared accountability, the industry can close the remaining gap and secure a lasting improvement in employee's health.

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02 Mining Industry Dust Control and Management Strategy: **10 Point Dust Strategy**

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What Informed the strategy?

Revision of the Occupational Health Milestones in 2024

Regulation 22.9 of the MH&SA Amendments & DMPR Instruction on OH Over- Exposure [CRTM]

Minerals Council Khumbul'ekhaya version 2.0 Strategy

Minerals Council Member Inputs

- **Multi-disciplinary Workshop**
- **MOSH Days of Learning**
- **Commodity Dust Working Group**
- **Community of Practice Adoption [COPA]**

Organised Labour – State – Employees – TRIPARTISM

Khumbul'ekhaya – MINERALS COUNCIL SOUTH AFRICA

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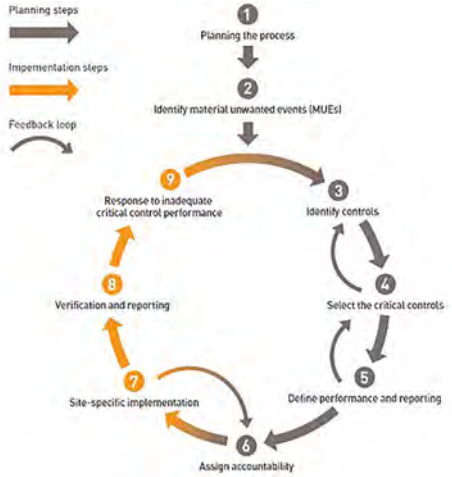
Multidisciplinary Approach & Leadership

SASOL Thubelisha Shaft

Adopt a Multidisciplinary approach to address exposures, risks and controls. Assign ownership and reporting accountabilities to Risk Owners (Mining), Risk Control Owners (Engineering), Control Verification Activity Owners (Ventilation & Occupational Hygiene), and all other relevant disciplines (i.e., HR, Training Department, Procurement, etc) to **continuously and actively engage** in the identification & management of the dust risk. This can be achieved through **a Dust Management Committee** within a mining operation to frequently review dust exposure results, dust control performance and remedial actions where necessary.

Dust Critical Control Management



ICMM Critical Control Management Process

Identify and utilize Dust Risk Bowties for **effective root cause analysis (validation of dust sources), critical control selection and management** thereof, with Control Owners assigned and accountable for control installation, maintenance and performance reporting. Dust **risk to be addressed at source** through enhancing the understanding of mechanisms of dust release and quantification of identified MUEs / dust sources. The Dust critical control management **process to be integrated** into other operational health and safety routines and reporting systems and dust management to be integrated into the overall mine philosophy and objectives, Life of Mine plans and enterprise risk management frameworks.

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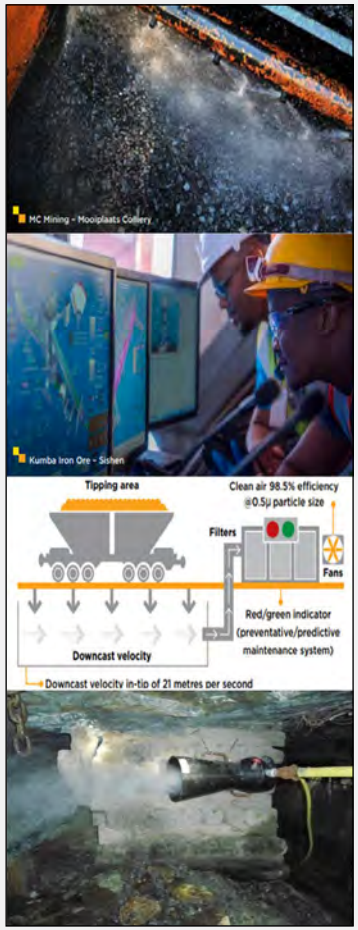
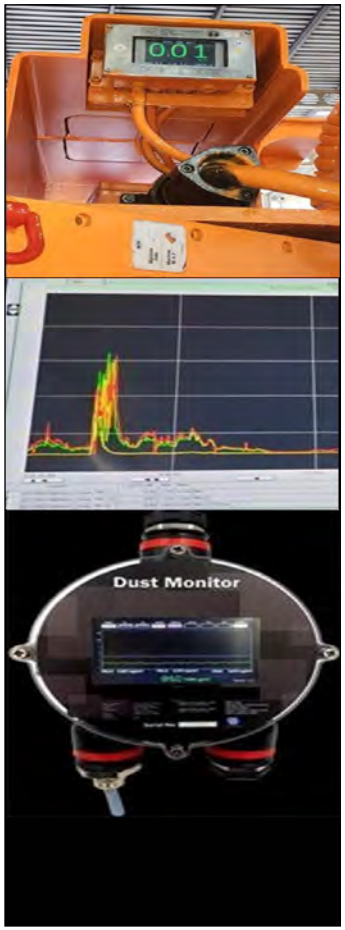
Leading Practice Adoption

Adopt applicable **MOSH Dust Leading Practices** identified by industry to reduce dust liberation or exposure of employees. Dust Leading Practices continue to significantly **reduce dust liberation** and exposure when adopted and sustained diligently by mining operations. Participation during leading practice community of practice adoption [COPA] meetings also allows input for continuous improvement of the practice where necessary. MOSH Leading Practice Adoption can be **critical in identifying barriers and behavioral aspects** which may hinder successful LP adoption.



Control Performance Monitoring & Response

Define and document control performance requirements and identify activities that impact control performance. **Define verification activities.** Establish Control Performance Evaluation & Monitoring system. **Continuous Real Time Monitoring (CRTM)** of dust engineering controls is useful for early detection & warning of deteriorating control performance, thus empowering control owners to take prompt corrective action and for employees to withdraw from hazardous environment/workplaces. All instances of control underperformance and control unavailability shall be formally investigated to identify root causes and to capture learnings for continual improvement of dust risk management.



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Control Digitalisation, Automation & Innovation

Glencore Coal – Tweefontein

Minimizing reliance on human intervention in dust controls is critical as manual actions are not always verifiable and often requires extensive training and supervision which may compromise the control efficiency and effectiveness in some instances. Leverage on emerging technologies, **machine learning and artificial intelligence** to reduce reliance on human intervention. This can be achieved by automation of key dust control mechanisms to improve reliability, operational consistency and promotion of innovations that reduce overheads in training and manual errors.

Strengthening Qualitative Dust Measurement & Data Reporting

Kumba Iron Ore - Sishen

Ensure improved **quality of dust measurements** (to be representative), **data sets** and **effective reporting** strategies to relevant parties or departments to enable timely action in case of high dust levels. Ensure Risk Owners have **access** to appropriate, accurate real-time data to support informed decision making. Implement robust and high-quality dust measurement systems which utilize real time monitoring to enable prompt and well-informed decision making. This will support streamlined data reporting processes, **agile and risk-based decision making** and leveraging on **dashboards and data analytics** for executive oversight and swift response.

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Research, Development and Learning

Ledjadja Coa - Boikarabelo

Participate in the continuous **identification, facilitation and dissemination** of dust and airborne pollutant related research. **Adopt and apply research outcomes** to optimize dust control. Promote a **culture of learning** from others through facilitation and participation in industry forums, workshops, Leading Practice community of practice adoption (COPA) meetings and MOSH Dust Days of Learning.

Risk and Critical Control Management Training

Seriti - Kriel Colliery

Training the relevant mining personnel in the principles of Risk Management and the Critical Control Management Process, will enhance their understanding of **risk concepts** (ICMM, ISO 31 000, etc.), equip them to develop **strong dust risk strategies** and alternatives, and document these as strong business cases. It will further enhance their understanding of the various processes and steps that make up the critical control management process.

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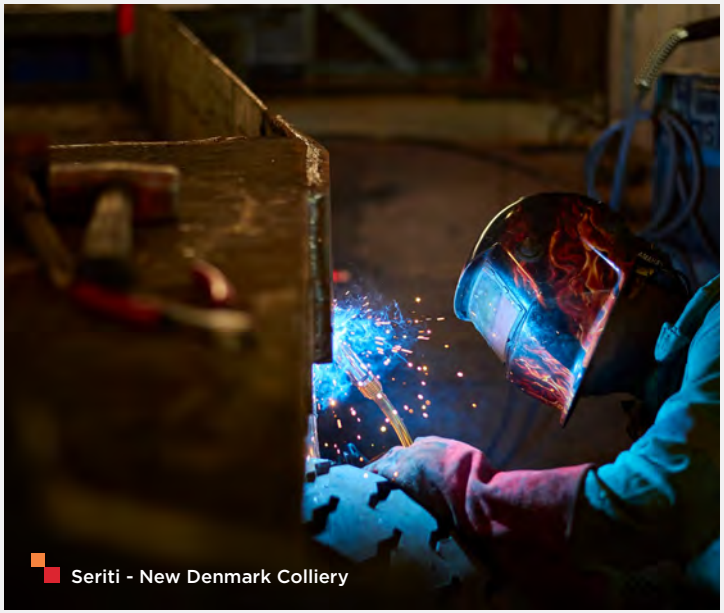
OEM Engagement



Seriti - New Denmark Colliery

Robust engagements with Original Equipment Manufacturers [OEM] of Dust Suppression Systems is crucial for **identification, selection, and continuous improvement** of dust controls. Such engagements can also assist in the validation of dust control performance prior to procurement.

Quality Assurance, Review and Continuous Improvement

Anglo American Coal - Zibulo

Develop a system **to assess** the conformance to critical control management process and to review the **effectiveness and efficiency** of dust critical controls. Dust critical control management assurance protocols to provide reliable rating of current dust CCM implementation and provide credible opinion on the reasons behind current performance. This should drive continuous improvement of dust controls.

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03 2nd Annual Mine Dust Conference 2025

"Turning a New Leaf on Dust Risk Management Within the SAMI"

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The Mine Dust Conference Is Growing In Leaps & Bounds.

The Minerals Council SA's MOSH Dust Team hosted its 2nd Annual Mine Dust Conference during July 2025.

This annual event continues to strengthen knowledge transfer and promote collaborative learning on airborne pollutants' dust controls and management aspects within the South African Mining Industry.

The 2025 theme was aligned to recent occupational health regulatory changes and amendments, but moreover the S.A. mining industry tripartite stakeholder's renewed commitment to the Mining Industry Occupational Health Milestones towards elimination of occupational lung diseases.

The shift within the occupational health landscape prompted the MOSH Dust team to facilitate the identification and transfer of valuable learnings that can assist S.A. mining industry to navigate this new terrain towards achieving "Zero Harm".

Dr Thuthula Balfour [M.Inst.D, Coach,] Head of Health at the Minerals Council SA, delivered a powerful keynote address on the day, calling for a renewed and united industry effort to eliminate occupational lung diseases.

The South African mining industry has made measurable strides: Respirable Crystalline Silica samples exceeding milestone targets dropped from 16% (2015) to 5.9% (2024) and Respirable Coal Dust samples exceeding milestone limits decreased from 15% to just over 10% in the same review period. Industry efforts have included:

- The MOSH Learning Hub's focus on dust mitigation
- CEO Zero Harm Forum's Post-Employment Care Framework
- Collaboration with MBOD/CCOD and the Mine Health and Safety Council' Investment in research and co-ordination of the industry's occupational health milestone-setting.

Dr Thuthula Balfour M.Inst.D, Coach, Head of Health at the Minerals Council SA

Mr. Gert van Heerden Founder, Executive Director at IP Capital, was one of the speakers

Conference session in progress

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03 | 2nd Annual Mine Dust Conference 2025

"Turning a New Leaf on Dust Risk Management Within the SAMI"

continued

The event demonstrated a multistakeholder collaboration, with presentations of the day ranging from legal aspects affecting occupational hygiene in S.A, presented by Adv. Le Roux from ENS Africa, Occupational Health Risk Determination Methods for Levy & Compensation by the Compensation Commissioner of Occupational Diseases [CCOD] Office's Mr Gert van Heerden , Particulate Real Time Monitoring and Critical Control Management by Prof Stefan Linde and Prof Cas Badenhorst from the University of Northwest and Diesel Particulate Matter Management by Dr. Amukelani Modau from ARM. Additional presentations were delivered by the Department of Minerals & Petroleum Resources [DMPR] by Mr. Brian Mongoma, Mine Health & Safety Council: Ms Fatheela Brovko, the University of Witwatersrand: Mr. Mothusi Mochubele and Mr. Paki Seroba and the Minerals Council South Africa: Dr Noluthando Moyo. All presentations were deemed informative & relevant, according to the delegate feedback.

Follow link below for conference presentations:

https://www.mosh.co.za/dust/events

The delegates also had an opportunity to network and engage with the various exhibitors on new technologies and OH systems.

The MOSH Dust Team aims to grow the event in leaps and bounds, ensuring quality, impactful knowledge transfer and collaborative dialogue that will drive and solicit support towards the elimination of occupational lung diseases within the S.A. mining industry.

Delegates engaging with exhibitors

Conference session in progress

"Well done on the conference. I really enjoyed every bit of it. Till the next one." Rudi

Congratulations once again on a great Dust conference, we look forward to the next one."

"We look forward to seeing it grow in impact and prominence in the years ahead." Fortune

"We are truly proud to have been part of such a significant platform that drives meaningful dialogue and progress in dust management and occupational health across the mining sector"

3rd Annual Mine Dust Conference 2026

COMING SOON

"Be on the lookout" !!

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04 Congratulating Seriti Khutala Colliery
on their Successful Adoption of CBAT leading practice

Khutala Colliery Verification Visit

Seriti Khutala Colliery has successfully concluded the adoption of the Conveyor Belt Automated Transfer Point Fogging Dust Suppression System [CBAT] leading practice, marking a significant milestone in its dust control and occupational health journey.

The Leading practice, originally documented at Exxaro Matla Coal and launched in 2019, the CBAT System was identified as a critical engineering control for reducing airborne dust at conveyor transfer points. By atomizing water into fine mist vapors, the system captures and suppresses respirable dust particles. The process is further enhanced using filtration process and low-dose surfactants, which sterilize water, prevent fungal and bacterial growth, and improve dust binding efficiency, but also reduce the probability of nozzle blockages.

Through the Collieries Dust Working Group, the MOSH Dust Team partnered with industry stakeholders to develop a Coal Industry Bowtie Analysis for Respirable Coal Dust, covering both surface and underground operations. This analysis highlighted coal transfer between conveyors as a significant source of dust liberation, reinforcing the importance of the CBAT system as a critical dust control.

Seriti Khutala Colliery signed up for adoption of this leading practice in 2021 and despite challenges, they have successfully completed adoption in April 2024. The process was driven by a multi-disciplinary team – including Engineering, VOHE, and Training under the MOSH Adoption Championship of Mr. Johnny Mbodi, an Outbye Section Engineer. With 62 conveyor belts spanning approximately 40-45km underground, the team developed a comprehensive Transfer Point Heat Map to identify high dust generating areas based on transfer capacity, ventilation flow direction and velocities. This informed the strategic prioritization and installation of CBAT systems across the operation.

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To ensure ongoing dust control (CBAT) availability and effectiveness, Continuous Real Time Dust Monitors [CRTM] were also installed downstream of each CBAT system. The CRTM data is fed into a live SCADA system, enabling Control Room Operators to monitor the system's performance and respond swiftly to elevated dust events. High- dust incidents are logged into Isometrix Incident Management system, investigated, and reviewed during the operation's weekly Assurance meetings with senior management.

The MOSH Dust Team extends its congratulations to Khutala Colliery for its successful adoption of this leading practice. The operation's commitment to reducing dust exposure and safeguarding workers against occupational lung diseases [OLD] is commendable and sets a benchmark for the industry.

The Seriti Khuthala Colliery team was able to showcase their dust management initiatives to the Minerals Council CEO, Mr. Mzila Mthenjane, and some of his executive team members and department heads in 2025.

The team also continues to share their learnings with industry members through platforms such as community of practice adoption [COPA], Collieries MOSH Dust Day of Learning and the Minerals Council Board hour of Learning.

Follow this link for more insights to the visit:

Minerals Council CEO Visit to Khutala Colliery

A heat map across **62 conveyor belts** and **40–45 km** of tunnels pinpointed high dust-generating areas.

Figure 1: Team viewing the Conveyor Belt Overview System which indicates the operation's underground conveyor belt system and the location of the CBAT and CRTM system. Source: Seriti Khuthala Colliery

Figure 3: CBAT Fogging Dust Suppression Sprays in Operation at 2 East 4 Transfer Point

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05 SASOL Mining's Groundbreaking Project
To Protect Workers Against Occupational Lung Diseases

SASOL Thubelisha Shaft

During 2023, SASOL Thubelisha Shaft took a bold step towards enhancing workers' health and safety by piloting the MOSH Real Time Dust Monitoring on Continuous Miner (CM) Leading Practice. This initiative was aimed at empowering Continuous Miner Operators to withdraw from hazardous dust area through early warning signal but also enable the operator to undertake corrective actions guided by a Trigger Action Response Plan (TARP) to reduce the liberation of dust.

SASOL Thubelisha Shaft, under the visionary leadership of Mr. Madder Steyn (General Manager-Mining) and Mr. Bossie Bossert (Manager Engineering), and their **multidisciplinary** team identified an opportunity to take dust control and exposure monitoring to the next level by further utilizing the data from the **Real-Time Dust Monitor** for interlocking the Continuous Miner (CM) to the feeder breaker (i.e. stop the feeder breaker when high dust levels are intersected or detected), thus stopping production. This bold step sought to transform real time dust monitoring from a passive warning tool into an active health and safety intervention.

The objective of the project was to determine safe/protective but practical dust levels to trigger the cut-off on the feeder breaker without causing any nuisance production stoppages. The exercise required a comprehensive risk assessment of the process and the envisaged change management of the workflow. The project also required a **multi-stakeholder** collaboration from the mine team which included Engineering, Mining, VOHE, Human Resources & Training Departments, the two (2) OEM's and organized labour representatives.

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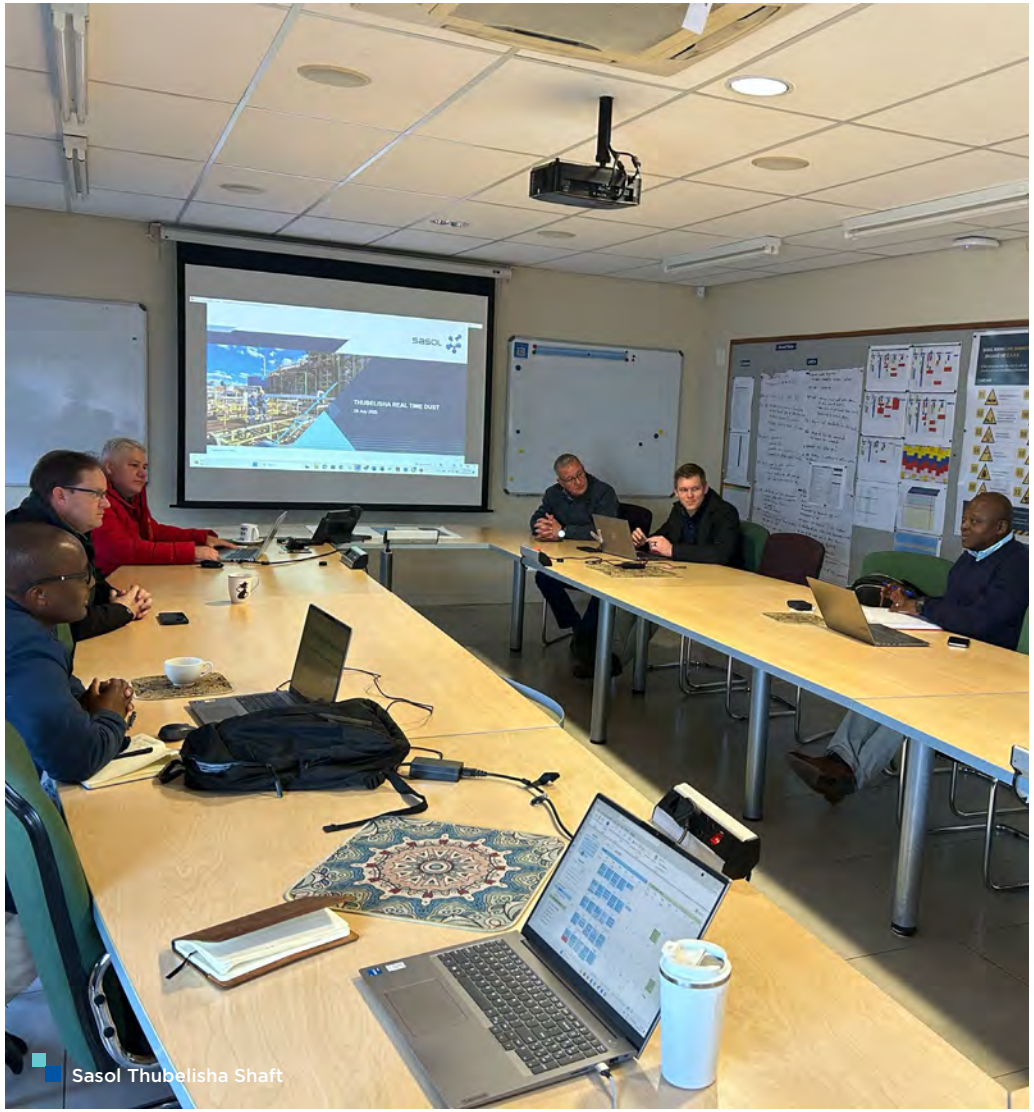
continued

The agreement(s) between the two **OEMs** (the Continuous Miner & the Real Time Monitoring System OEMs) for integration of their systems was one of the challenges in this process and was facilitated by the mining operation's management through dialogue and formal agreements.

The pilot project involved studying and analysing the dust trends, the number of high dust alarms during a production shift, the cause(s) of high dust levels, and standing time by either operator or other personnel to remedy any hazardous or sub-standard conditions. The pilot ran over a period of two (2) years, since inception during the 2023 year.

Despite numerous challenges ranging from hard wiring, cable routing, faulty sensor equipment and multiple software version updates. The SASOL Thubelisha Engineering team, together with OEM's forged ahead with the technology refinements until a successful integration and interlocking of the feeder break was achieved.

A critical element of the project was the management of change to ensure that the employees are fully conversant with the new technology and understanding



Sasol Thubelisha Shaft

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continued

what the expectation from various affected stakeholder. **Training** lesson plans/material were developed by the mine Human Resource Development team with the assistance of the OEMs, and followed by a training roll-out programme to all affected disciplines on an annual basis.

The dust trigger alarm levels were also extensively scrutinised and revised by the Ventilation & Occupational Hygiene Engineering department to ensure that the set alarms do not cause nuisance production stoppages but represent Time-Weighted Averages (TWA) rather than instantaneous high dust readings, ensuring that the system responds to real exposure risks.

Other than the visual alarm display on the Continuous Miner to trigger corrective action of the operator, the system is also monitored through SCADA at the control room, ventilation and section engineer office. This has enabled swift response to any system failures incurred.

However, not only dust levels are monitored by the system, but also the CM's water level, boom height during cutting and machine voltage etc. All these parameters have also proven to be worthy factors to consider for dust **control monitoring**, control failure investigations and predictive maintenance. The results of this pilot project is a breakthrough towards dust **control automation** and **process interlocking** to prevent high dust liberation and exposure.

This initiative by the SASOL Thubelisha Shaft is truly commendable and deserves to be thoroughly documented for widespread **sharing and learning** across the S.A. mining industry. This project has truly demonstrated SASOL Mining's continued commitment to the elimination of occupational lung disease through innovation, collaboration and proactive risk management.

Some of the key learnings from the project were:

Improved Reliability

By analyzing trends in machine performance and environmental conditions, maintenance teams can schedule repairs before breakdowns or high dust exposures occur.

Cost Efficiency

Preventing unexpected failures reduces costly downtime and emergency repairs.

Health & Safety Support

Predictive maintenance supports safer operations by ensuring critical control systems remain functional, especially in environments where dust control is vital for health.

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06 Celebrating Our 2024 MOSH Dust Intern: **Mohlago Kagiso Nicole Sekgobela**

Mohlago Kagiso Nicole Sekgobela

As we reflect on some of the MOSH Dust Team's successes for 2025, we celebrate the journey of our intern, Mohlago Kagiso Nicole Sekgobela, who joined the MOSH Dust Team in January 2024. From day one, Kagiso carried out her work with pride, consistently went the extra mile, and embraced every learning opportunity with enthusiasm.

Through the internship programme, she gained valuable exposure across the mining industry—from Occupational Hygiene within the MOSH Dust Team, to Health and Safety at Enaex Africa Secunda, and later to Occupational Hygiene and Ventilation Engineering at Thungela's Goedehoop & Elders Collieries. Her commitment and positive attitude made her a standout young professional in the field of Ventilation and Occupational Hygiene.

Through the assistance of the Minerals Council Kagiso managed to successfully register and complete her practical training and Intermediate Certificate in Mine Environmental Control. She is currently employed as a Ventilation Observer within the South African Mining Industry.

In her message to the team, Kagiso shared:

"The MOSH Dust Team not only took a chance with me, but opened doors I never imagined... My internship was nothing short of extensive, and as I leave for new opportunities, I will never forget that someone took a chance with me."

She concluded with gratitude:

"Thank you, MOSH Dust Team, I will carry this torch you have lit for me and never let the flame die down."

We thank Kagiso for her dedication and wish her continued success on her journey ahead.

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07 Excellence in Dust Management:
MOSH Dust Award Winners at Coalsafe

MOSH Dust Awards

COALSAFE 2025 themed

"Sustainably Delivering Today, Shaping Tomorrow"

was hosted early in the year, one of the aims of this conference is to honour exceptional achievements in Safety, Occupational Health, Environmental Management, and Community Development through the HSEC award ceremony. For the first time in the history of the MOSH Learning Hub, MOSH Awards, a category that recognizes industry's efforts towards achieving the Health and Safety Milestones through adoption of MOSH Leading Practices was introduced at CoalSafe.

The MOSH Dust Award went to Seriti Khutala Colliery for successfully and sustainably concluding adoption of the continuous real time monitoring [CRTM] of airborne pollutants engineering controls leading practice. Congratulations to Seriti Khutala Colliery on this achievement!!

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