PROBLEM SOLVED™ PAPER

SOLUTION: CleanScrape® , Dual SC16, V Plough, Bias Plough, Belt Support, Sealing

INDUSTRY: Gold Mining

LOCATION: Gauteng Province, South-Africa

TITLE: Optimizing Efficiency in Underground Mining Operations

Underground belt conveyors faced carryback issues, resulting in unplanned downtime & potential safety risks.

PROBLEM

One of the largest and deepest gold mines in the world — extending 2,998 meters below the surface — faced severe material carryback issues on 22 underground conveyor belts of 1200mm wide belts running at speed of 2 to 3.5 mtr/sec. The problem was worsened by the use of competitor belt cleaners, which proved ineffective due to the presence of clip joints on the belts. As a result, the mine experienced reduced productivity, increased equipment damage, maintenance costs, significant downtime and potential safety hazards.

Efficient CleanScrape® Primary Cleaner are installed in minimal space and is safe for use on clip joints.

SOLUTION

Following a thorough conveyor belt audit conducted by our Partner Manager, a comprehensive solution was recommended to address carryback and material spillage challenges. The proposed setup included the installation of 12 CleanScrape® Primary Cleaners—safe for use on conveyor belts with clip joints —alongside 22 Martin® SC16 as Dual Secondary Cleaners for enhanced cleaning efficiency. To further protect the system, Martin® V-Plough and Bias Plough units were installed at the tail pulleys to prevent material buildup and potential belt damage. Additionally, proper belt support was ensured with 14 Martin® High Speed Impact Cradles (HSIC), and effective sealing was achieved using Martin® ApronSeal™ skirting.

Bias Plough installed to protect the tail pulley.

RESULT

The implementation of this comprehensive solution brought a remarkable transformation to the mine's conveyor belt operations. Consequently, the mine experienced increased operational efficiency, a substantial reduction in maintenance interventions, improved safety conditions, and a notable drop in unplanned downtime—leading to greater productivity and cost savings.

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