

WHY DO WE HAVE CARRYBACK?

3% Carryback
~ 6 tonnes loss



5% Carryback
~ 10 tonnes loss



15% Carryback
~ 30 tonnes loss



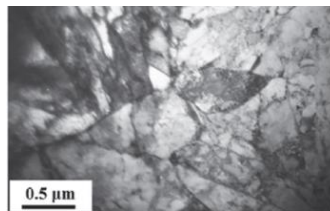
NOTE: This is considering a 793 truck with 200 tonnes capacity

WHAT IS THE ROOT CAUSE?

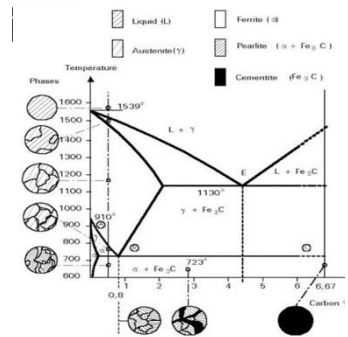


The high-resistance steel used in mining truck trays (dump bodies/ TRAYS) is designed for extreme abrasion resistance and structural integrity, typically featuring a **tempered martensite or bainite-martensite mixed microstructure**. These materials are often high-strength, low-alloy (HSLA) steels or wear-resistant steels (e.g., NM450 or similar proprietary grades) treated to achieve surface hardness often exceeding 430–450 HB.

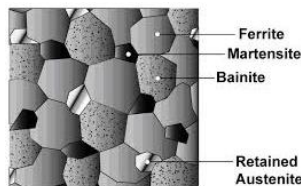
MICROSTRUCTURE OF STEEL HIGH RESISTANCE



Electron microscope image of Hardox 450 steel (light field)

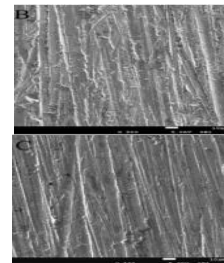


Even when made from high-resistance steel, mining dump bodies and trays are **not microscopically smooth**. Their microstructure naturally contains **gaps and surface irregularities** formed during manufacturing.



Under operating conditions, these gaps become anchoring points where material accumulates, depending on the **type of material hauled, moisture, particle size, and environmental conditions**.

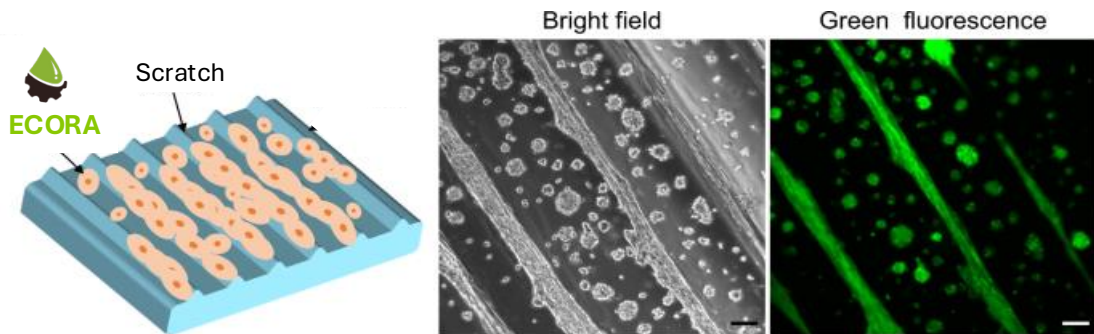
This issue is intensified during operation: constant impact, abrasion, and vibration create **scratches and micro-cracks**, increasing surface roughness and forming new retention points. As a result, material buildup and carryback accelerate, reducing payload efficiency, increasing fuel consumption, accelerating wear, and creating ongoing maintenance and safety challenges.



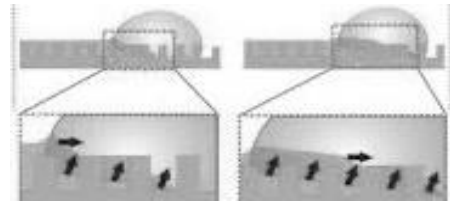
THE SCIENCE BEHIND THE RESULTS



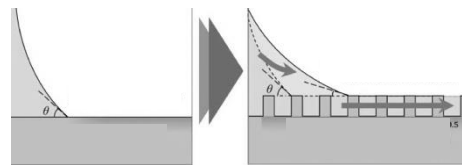
ECORA – Eco Release Agent™ works by addressing the problem at its root: the steel surface itself. The eco release agent uses **nano-scale technology** to penetrate and occupy the microscopic gaps, pores, scratches, and micro-cracks present in high-resistance steel dump bodies and trays.



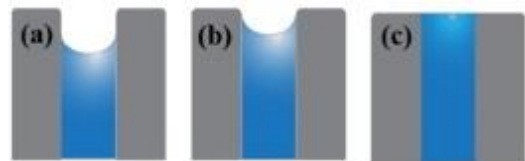
Once applied, the product **adheres to the steel surface** and forms a thin, continuous **protective barrier** that smooths surface roughness at a microscopic level. This barrier significantly reduces **surface energy and friction**, breaking the adhesion forces between the hauled material and the steel.



As a result, the material is unable to bond to the surface, the cohesion is disrupted, and the load releases naturally, moving downwards under gravity. Even when applied over trays with existing piled up material and carryback, ECORA infiltrates through the accumulated material, reaches the steel substrate, and fills existing cracks and defects.



With each application, the surface becomes progressively more sealed and protected (a, b, c). The coating remains active during operation and is only removed during intentional mechanical cleaning, ensuring sustained performance and cumulative protection over time.



During an ECORA trial™, a **protocol** is used to determine the optimal product dosage and procedure to achieve maximum performance. The trial involves **saturation of the equipment surface** to fully seal micro-gaps and defects, ensuring the best release results under specific **material, equipment, and environmental conditions**.

As these variables change over time, performance may vary, so it is recommended to **periodically recalibrate** the protocol to maintain performance and deliver the **best return on investment (ROI)**.

Proven Results



ECORA Solutions delivers results from the first day of use:

- Up to 95% reduction on carryback/ build up material
- Up to 30% reduction in downtime
- Up to 30% increment on total load volume
- Up to 50% reduction in water usage



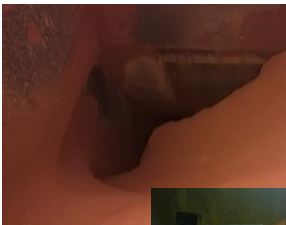
- ✓ Less than 1% build up material after 4 days operating
- ✓ Cleaning required only after 8 days of continuous operation
- ✓ Reduction on downtime and labor dependency
- ✓ Reduction on operational risk



- ✓ 20% extension of parts life span due to reduction of abrasion
- ✓ Reduced cleaning time in 25%
- ✓ Reduced water consumption



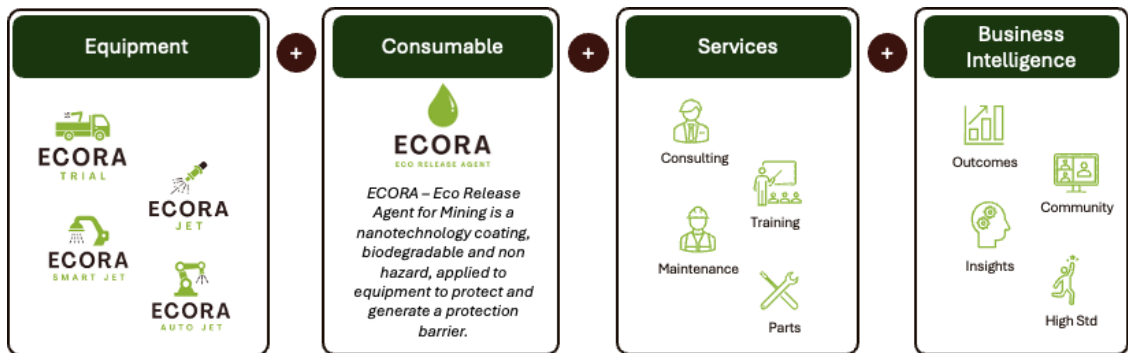
- ✓ 25% reduction on unload time
- ✓ Increment of 7% in volume moved
- ✓ Reduction on downtime due to the less cleaning pauses required
- ✓ Reduction on labor dependency and op. risk



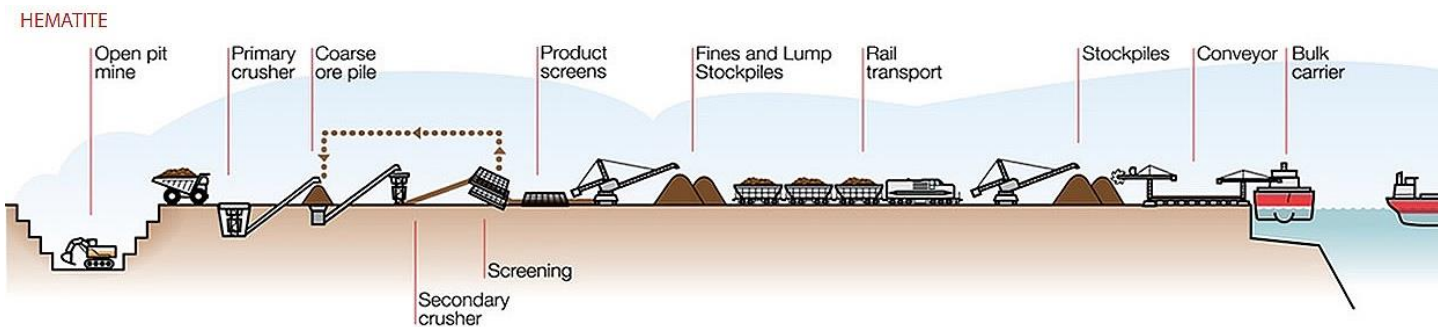
- ✓ 1200% flow volume increment with productivity gains
- ✓ Cleaning required after more than 4 hours of operation
- ✓ Reduction of incidents
- ✓ Reduction of downtime due to obstructions and cleaning and increased physical availability and equipment lifespan

AT ECORA SOLUTIONS WE ARE OBSESSED TO SOLVE YOUR ISSUES WITH BUILD UP MATERIAL

Each of the four integrated components — equipment, consumables, services, and business intelligence — plays a critical role, and their combination delivers exceptional results. By aligning technology, eco-friendly release agent, automated application systems, expertise, and data, we ensure every solution is precisely tailored to each site's needs — driving performance, improving reliability, and achieving extraordinary outcomes.



ECORA SOLUTIONS IMPROVES THE MATERIAL FLOW IN YOUR MINE



BOOK YOUR TRIAL

LET'S MEASURE HOW MUCH ECORA CAN DO FOR YOUR BUSINESS

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