

**DATE:**

March 9, 2009

LOCATION:

JAMAICA

OBJECTIVE:

MRA used to reduce bauxite carryback in mine haul trucks



In March 2009 Global Barrier Coatings partnered with a large bauxite mining company to implement a haulage efficiency improvement project. The mine was seeking to eliminate or significantly reduce carryback in haul trucks and to Improve haulage efficiency, reduce costs and increase revenues

Carry back has been a big issue in mines. At this particular mine, high moisture content and a humid environment was causing material to clump together, making it difficult remove from haul trucks. Many haul trucks were heading back to the loading site still partially loaded due to material sticking to the truck box. This not only reduces productivity of the mine, but costs thousands of dollars in down time to have the product removed manually. MRA greatly reduces or eliminates carry back, thereby increasing productivity and revenue.

In this case, carryback of approx. 10 -15 tons was observed on untreated trucks, resulting in lost haulage capacity and incremental direct costs related to increased circuits and removal of carryback. Cleaning occurs every 3 shifts on average and requires 30-45 minutes per truck.

Trucks were treated with Global Barrier Coatings MRA Mining Release Agent. MRA treated trucks accumulated an average of 1.5 tons carryback over the first 8 days of continuous use. As the truck beds became 'seasoned', average carryback was reduced to 0.5 tons or less. Using the MRA product, it takes approx. 8 days for 5 tons to accumulate, resulting in 1 x cleaning per truck. With MRA, cleaning occurs once every 16 shifts on average and requires 10-15 minutes per truck.

The application of MRA reduced carryback by 95% which translates to a direct cost savings of **1.8 million dollars per year.**

Treatment with MRA resulted in **67% less time spent cleaning trucks** and trucks required cleaning and resulted in a **94% reduction in the frequency of cleanings required.**



MRA was applied with a 150 psi 4 pump, electric spray application system by a crew of two mine personnel. Improvements were recorded immediately, with an 88% reduction in carryback over the first 8 days of use. Once MRA had accumulated in the truck beds, and the trucks had become “seasoned”, we recorded a 95% reduction in carryback.

This resulted in a significant increase in carrying capacity which translates to cost savings as fewer haul trucks are required to maintain the same haulage capacity.

Secondary benefits of MRA include:

- less wear & tear on equipment/tires
- lower fuel consumption
- increased equipment efficiency
- reduced maintenance costs
- lowered labour costs
- increased site safety

Current Haulage Capacity (per day)

Truck Capacity	Number of Trucks	Loads per Day	Theoretical Capacity	Average Carryback	Effective Capacity
100-ton	8	24	19,200	12%	16,896
85-ton	7	24	14,280	12%	12,566
50-ton	3	24	3,600	12%	3,168
	18		37,080		32,630

Haulage Capacity with MRA (per day)

Truck Capacity	Number of Trucks	Loads per Day	Theoretical Capacity	Average Carryback	Effective Capacity
100-ton	7	24	16,800	2%	16,464
85-ton	7	24	14,280	2%	13,994
50-ton	2	24	2,400	2%	2,352
	16		33,480		32,810

	per Day	per Month	per Year
Operating Cost per Truck	\$ 2,505	\$ 75,164	\$ 901,968
Trucks Removed from Use	2	2	2
Direct Cost Savings	\$ 5,011	\$ 150,328	\$ 1,803,936
Cost of MRA Product	\$ (1,080.00)	\$ (32,400)	\$ (388,800)
Net Cost Savings	\$ 3,931	\$ 117,928	\$ 1,415,136