GLOBAL BARRIER COATINGS

DATE:
February 26, 2011 -
April 8, 2011

LOCATION:
Wyoming, USA

OBJECTIVE:
MRA used to prevent materials from building up on haul truck undercarriages and to reduce wash times

Global Barrier Coatings, Inc. Personnel were on site from February 26 through April 8, 2011 at one of the largest coal mines in the United States. Global Barrier Coatings, Inc. Performed a demonstration of the MRA™ slip coating product on haul truck undercarriages. The project was designed to demonstrate the effectiveness of the MRA™ product in preventing materials from building up on haul truck undercarriages and to reduce wash times, thereby increasing equipment availability, reducing stress on equipment due to excessive weight and reducing costs.

The undercarriage application demonstration included 13 x haul trucks and utilized approximately 60 gallons of the MRA™ product. Data collected from the haul truck undercarriage application conclusively shows that treated haul truck wash times can be significantly reduced (and operational availability increased) by more than 40%. The project also showed that treated haul trucks accumulate less build-up on the undercarriages between preventive maintenance intervals. Among other benefits, the treated trucks are less likely to set off overweight sensors and alarms.

The data from the Demonstration Project shows that use of the MRA™ slip coating product:

- Substantially reduced carryback in truck beds, thereby maximizing payload
- Eliminated overloading
- Reduced the number of cycles required per truck through maximizing haulage efficiency
- Maximized throughput by utilizing up to 99% of haulage potential
- Substantially reduced the time and frequency of cleaning the beds, thereby decreasing downtime and increasing availability
- Reduced wear on equipment, tires, etc. through fewer cycles
- Reduced potential for damage to truck beds and risk by cleaning with excavator

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Information collected from the mine indicates that the beds of the trucks hauling overburden can accumulate significant (up to more than 30%) build-up (carryback) over a short period of time (estimate less than 40 x load/haul/dump cycles). Carryback is caused primarily by the high moisture content and bentonitic clay content of the material being hauled. The sticking problem occurs to some extent year round and is exacerbated by freezing temperatures and periods of high precipitation.

These conditions create carryback that;

- Reduces the efficiency of the trucks (unusable portion of the bed)
- Causes frequent overloading
- Requires additional truck cycles, resulting in increased wear on equipment, tires, etc.
- Increase the amount of time it takes to clean the mine haul trucks
- Increase the frequency of bed cleaning
- Increase the potential for damage to truck beds from cleaning using an excavator

Average Truck Wash Times:

Untreated trucks	3.5 hours
MRA™ treated trucks	≤ 2 hours

Results show a 40% decrease in wash time through reduction of buildup and ease of cleaning.

Average Truck Bed Haulage Efficiency Results:

MRA™ Treated Trucks:

Average number of cycles before build-up could be observed: 150
Maximum number of cycles reported without build-up: 359
Average number of cycles before cleanout was required: 175

Untreated Trucks:

Average number of cycles before buildup could be observed: 82
Average number of cycles before cleanout was required: 114.5

Results show a 35% increase in haulage efficiency through carryback reduction

It is important to note that the longer MRA™ product is in use, the better it performs. Extended usage allows the product to effectively penetrate the undercarriages surfaces, creating a longer lasting, non-stick surface. Product performance will increase over what was achieved in the demonstration project when in full scale, regular use.

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