PROBLEM SOLVED™ PAPER

SOLUTION: Martin® Cleanscrape™ Primary Cleaner

INDUSTRY: Cement

LOCATION: Detroit, MI (USA)

The St Marys Detroit plant is prominent on the skyline as commuters drive across the Rogue River.

Limestone and other raw material taken from trucks and barges is stored in outdoor piles.

Mounted diagonally, commonly at a 17º angle, the CleanScrape spans the entire belt profile.

PROBLEM

The St Marys Cement plant -- located along the Rogue River in Detroit -- produces 200 to 250 tons per hour (181 to 226 mtph) of Portland cement. Front loaders transfer dusty 1.5 to 2 inch (38 to 50 mm) minus limestone and gypsum aggregate onto the 30-inch-wide #14 belt. Operators found that polyurethane cleaner blades were unable to completely clean the belt. “The fines and mud take on the tacky consistency of toothpaste, causing it to cling to the belt along with smaller pieces of aggregate and shale,” said Plant Maintenance Supervisor David Accomando. “This led to a lot of carryback spilled along the return path, where it fouled idlers and built up so high under the loading zone that it would encapsulate the tail pulley.”

SOLUTION

Martin technicians concluded that the #14 conveyor was an excellent candidate for the Martin® CleanScrape® Primary Cleaner. It can be effective enough to eliminate the need for a secondary blade, proven to deliver as much as 4x the lifespan of competing urethane cleaners. The flexible design is installed diagonally across the discharge pulley, forming a 3-dimensional curve that conforms to the pulley’s shape. The matrix of tungsten carbide teeth is tensioned lightly against the belt to prevent damage to the belt or splices. Despite extremely low contact pressure, it has been shown to remove as much as 95% of potential carryback material.

RESULT

After a full year of punishing 24/7 operation with little downtime through conditions that included cold slush and mud, as well as hot and dry dusty material, the original CleanScrape cleaner continues to perform consistently well, without a single adjustment. The cleaning schedule has been altered from a 2 to 3 person crew over a full shift twice per month, to just a single worker hosing down critical areas for an hour or so, once per month. “For this application, we were very surprised by how well it worked,” Accomando said. “The return side of the belt might have a little bit of wet material still on it, but nothing even remotely close to what it used to be.”

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