VIBRA SCREW
CASE HISTORY

C-267
Vibra Screw Bin Activator Speeds Harbor Dredging and Landfill Project

Customer
Walsh Environmental of New Jersey and its contractor Tom Moyer & Associates of Colorado.

Cement kiln dust mixed with harbor dredged mud will fill a 60 acre parking lot with as much as six feet of fill.

Problem
The Hudson River has silted in many of the harbors in New York and New Jersey so container ships and tour ferries are having difficulty docking in these ports. Dredging efforts continuously remove silt from the channels and dock areas. For many years, the dredged materials had been dumped at sea, but due to industrial contamination, this practice has stopped.

Walsh Environmental has a contract with the Port of New York-New Jersey Harbor Commission to process 1.3 million cubic yards of harbor sludge and use it as compactible soil. The soil will be used as landfill for a new shopping center adjacent to Newark Airport.

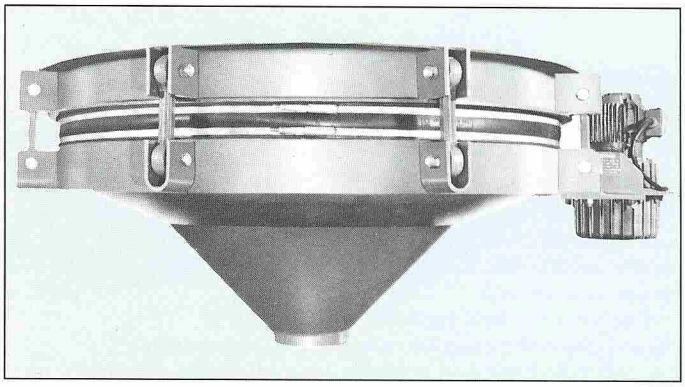
The process involves stabilizing the dredged material by mixing it with fly ash, kiln dust and cement material. The process also neutralizes the contaminants. The problem in handling and stabilizing the additive material is getting it to flow out of a silo at a constant rate.

Solution
Vibra Screw Bin Activator, 6 ft diameter.

With design assistance from VSI representative Bill Haskins of Techna-Flo Corporation, Walsh Environmental installed one 6 ft diameter Bin Activator under a 12 ft diameter, 34 ft high silo. The Bin Activator is flexibly hung from the storage silo, substantially replacing the lower bin cone section. An integral baffle relieves headload over the outlet. In operation, a gyrator produces powerful horizontal thrusts which vibrate the Bin Activator, its baffle and the contained material, but not the bin. The baffle resolves horizontal vibrations into vertical thrusts high up into the bin. This eliminates ratholing and bridging.

The Bin Activator delivers the kiln dust to two rotary feeders which, in turn, feed two pug mills which combine and mix the mud and the kiln dust. The mixture drops to a 48" wide belt conveyor which carries the material thirty five feet to waiting trucks for distribution.

Results
The Bin Activator produces a smooth, continuous flow of material to the rotary feeders and ultimately to the pug mills. The Bin Activator usually operates at 20 hour cycles while the contents of each 4,000 cubic yard dredge barge is emptied and passes through the system. The fill, sandwiched between layers of recycled construction materials and clean fill, has raised the parking lot acreage by as much as six feet in some areas. Several more plants are planned using similar technology at New York's JFK Airport and along New Jersey's Raritan River.



One Vibra Screw Bin Activator controls the discharge of kiln dust from a 12 ft diameter, 34 ft high silo as the system empties 4,000 cubic yard harbor dredge barges.