

### Multi-Million Dollar Water Treatment Plant Eliminates Shutdowns With Vibra Screw Equipment.

#### The Customer

The Orange County Water District, Treatment Plant at Fountain Valley, California

#### The Situation

The ever increasing demands of a growing population on West Coast water supplies had caused a serious drop in the Orange County (Calif.) water table. This resulted in the intrusion of seawater and consequent damage from salination.

To maintain the water table at its proper level and thus reduce the strain on the local water supply, the water authority injects reclaimed wastewater into the ground. Before this is done, however, the wastewater must first undergo treatment with slaked lime.

#### The Problem

Orange County stores lime for this purpose in a large 12'6" diameter by 11' straight side, bulk storage bin of 12,500 lbs. capacity. From this the quicklime or recalcined lime must be discharged to a lime slaker, accurately metered at a rate of not more than 4,000 lbs. per hour.

The recalcined lime is susceptible to bridging, clogging, and plugging in the bin, which was originally equipped with a conical vibrating bottom fitted with a grease lubricated gyrator and discharging to a weigh belt feeder. But the cone-shaped bin bottom only contributed to the packing of the lime. Excessive vibration and cycling of the unit were tried, but they caused cracking of the flimsy rolled cone construction and failure of the gyrator. The weigh belt feeder could not operate properly with the halting flow. Metering accuracy was not satisfactory.

It was at this point that Vibra Screw engineers, experienced in the handling of bulk lime, were called in.

#### The Key

VIBRA SCREW CONTROLLED VIBRATION EQUIPMENT —

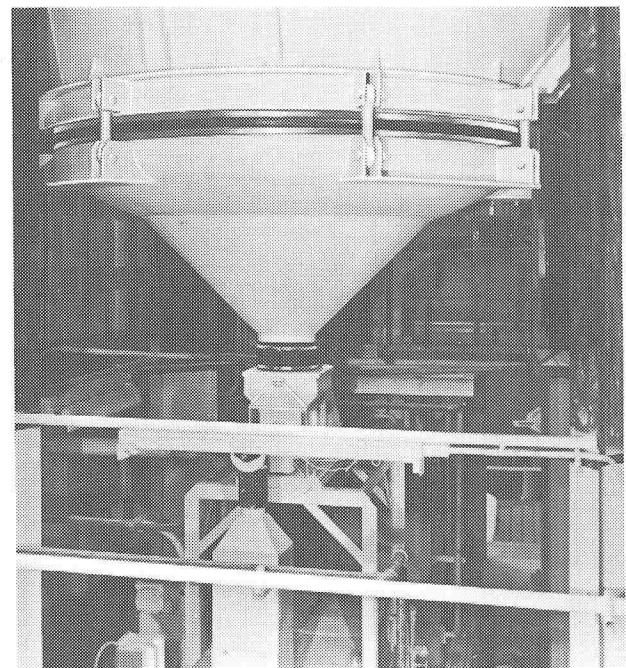
One 8' diameter Vibra Screw Bin Activator, and One 4" Vibra Screw Heavy-Duty 7-24 Screw Feeder.

#### The Solution

The Vibra Screw Bin Activator, a vibrating discharge mechanism of patented design, has a dished head contour that avoids the packing experienced with conical dischargers. The Vibra Screw gyrator vibrates the Activator and its contents — but not the bin — horizontally, shaking loose the quicklime. A curved baffle directly above the discharge opening directs vibrations high up into the bin, inhibiting overhead bridging of the material. This allows the lime to fall freely through the outlet into the Heavy-Duty Screw Feeder beneath it, where the feeder vibrates the lime to a consistent density, filling each screw flight uniformly and insuring a regulated flow.

#### The Results

Lime-handling problems at the California water treatment plant have been solved and the flow of material is now maintained at a steady rate, with metering accuracy of  $\pm 1$  to 2 percent of the specified pounds-per-hour to the slaker.



Vibra Screw Bin Activator and heavy-duty Feeder eliminate packing and flooding problems previously experienced with a conical discharger and weigh-belt feeder. Now lime flows consistently and uniformly.