

# PRODUCT FACTS

Title: \_\_\_\_\_ ROPLEX  
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## Solution to Sludge Bridging

Since 1978, a bin and pile discharger has been efficiently moving thousands of tons of sewage sludge at a sewage treatment plant operated by the Vallejo Sanitation & Flood Control District, Vallejo, California. Designed and manufactured by Hindon Corp. of Charleston, SC, the Roplex discharger is installed in a 50-ton capacity hopper.

According to Ron Matheson, plant superintendent, the equipment has effectively eliminated a sludge discharge problem that existed before it was installed in the hopper. Previously, the hopper would not clear and required large amounts of water to help loosen the adhesive sludge. "That method was not very good," says Matheson. "The sludge was dewatered and conveyed to the hopper where it had to be liquidized so it would flow out of the hopper."

To solve its problem, the agency redesigned the hopper so that the sloping sides were steeper, and installed the discharger at the bottom. Basically, the unit consists of a stationary, circular steel table with a discharge opening; a curved sweep or plow arm powered by an external electric motor; and a pressure relief cone designed to promote mass flow.

The cone is centered above the sweep arm and discharge opening, which prevents spillage through the opening. Designed with a steep wall angle, the cone diverts the material to the stationary table where it is extracted by the plow arm. Unlike table feeders, there is no dead mass of material in the center of the hopper.

The treatment plant dewateres sewage 12 to 14 hours a day. This operation produces the sewage sludge or filter cake which is continuously carried on conveyors to the hopper. The sludge is lime-treated, heavy, about 34 percent solids, and prone to bridging over a wide span.

Since the sludge hopper has only a 35-ton effective capacity, it must be cleared several times a day to keep up with the conveyors. "The clearing operation takes about 10 minutes," says Matheson. "We drive a 27-cu. yd. transfer truck and trailer under the hopper, turn on the discharger, and rapidly clear the hopper. Using the discharger 40 to 50 minutes a day, we can dispose of some 140 to 175 tons of sludge." The truck hauls the sludge to a nearby 2,500-acre farm where it is used as fertilizer for oat crops.

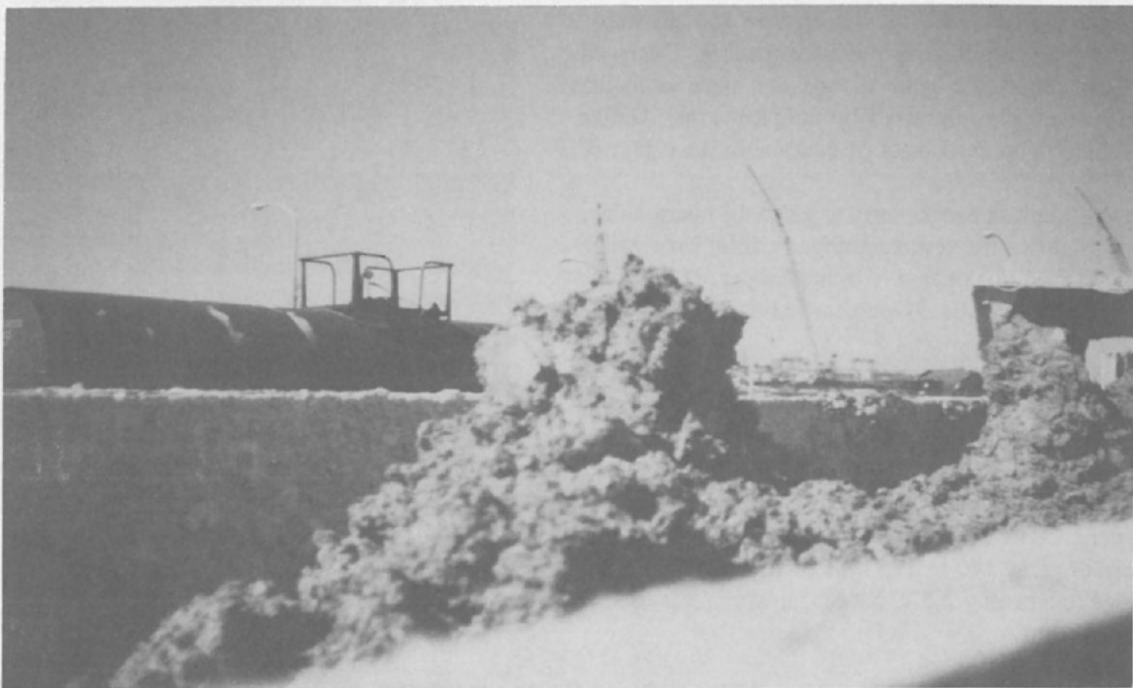


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**Overall view of sludge silo with ROPLEX at outlet.**



**Newly discharged lime-treated sludge (at 34 percent solids) within the truck bed.**