Vaughan
Unmatched Reliability

Vaughan Pumps Help Improve Pulp Mill Reliability and Downtime

CASE STUDY

Background:
The Harmac Pulp Mill in Nanaimo, British Columbia, found a pumping solution to dewater sumps where chips tend to cause pump plugging and maintenance problems. This Kraft Pulp Mill produces approximately 365,000 tons of pulp per year, from wood chips delivered by an average of 50 – 60 trucks a day and over 100 trucks on a busy day. The wood chips are unloaded from trucks using a hydraulic truck tilt system that dumps the chips into a below-grade conveyor system. The wood chips and debris that escape the conveyor system accumulate on the floor of the below-grade vault and are hosed out weekly into a sump, then pumped elsewhere.

The Problem:
Previously, this chip-receiving sump was pumped out by a self-priming pump which experienced weekly plugging at various locations including the pump suction inlet, in the discharge piping, and inside the pump at the check valve. For many years, the existing pumps struggled to keep the sump clear, resulting in frustration and poor housekeeping of the area.

The Solution:
In late 2014, a Vaughan Vertical Wet Well model V3L 3" discharge Chopper Pump was installed at the Harmac Pulp Mill in place of the existing self-primer. Vaughan Chopper Pumps are centrifugal pumps with the unique ability to chop and condition incoming solids as part of the pumping action. The patented chopping action of the pump enables it to easily handle the fibrous wood chips and other debris that is washed into the sump.
The vertical wet well configuration of the pump provides the added advantage of eliminating suction piping while keeping the motor and wiring out of the sump. Another important element in this application is a separate water line to the sump which provides fresh agitation water and prevents chip stratification during pit pumpdown.

The Results:
Since installing this Vaughan Chopper pump with sump agitation nearly seven years ago, pump reliability has greatly improved, and pump downtime is typically only caused by clean-up crews who unknowingly fill the sump with unpumpable dry chips. When this occurs it is easily addressed, leaving the mill employees more time and energy to focus on production. The change in pump and the addition of agitation has improved operation in the area and has saved uncountable man hours dealing with unclogging lines and pumps.

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