

Willard Says.....

Success Story #3

Company “A” bought a “new, reconditioned” dredge. This collection of used, abused, ill-matched, worn out, obsolete components was slapped together by a bunch of morticians and covered with a coat of new paint. (I do not intend to demean morticians unless they actually attempt to assemble a dredge and remind me to tell you what I really think about “new, reconditioned” dredges sometime.) The first year, production was disappointing when not interrupted by persistent breakdowns of the “new, reconditioned” equipment. The next year, determined and desperate to improve production, “A” shortened the discharge pipeline and put a newer impeller in the pump.

(They learned that new impellers for their long-dead brand of pump are available in the same abundance as the extinct dodo bird.) One more reason to look askance at the wisdom displayed by those who buy “new, reconditioned” dredges.

Surprise, surprise, production did change...it went down—from poor to pitiful.

We were invited to take a look at the problem. An engine guru was blaming the dredge pump for overloading the engine. A pump “expert” stated with no hesitation that the engine was inadequate to the task. As it turned out, both parties were correct in their observations.

Hotrod Dredge Operation

“A’s” operator, heeding the instructions of the same incompetents who sold them the dredge, was using the “hotrod theory” of dredge operation. This, not uncommon recommendation, teaches that the only way to pump is to run the engine wide open under any and all conditions. In this case, the engine would not go over 1500 rpm, which was slower than before with the worn impeller and longer pipeline. Also, now the velocity was over 23 feet per second, the clear water vacuum was a whopping 16 inches and maximum production peaked at about 75 tph. The solids arrived at the plant riding in a veritable flood of water.

Problem Solved

“A” *installed and used* a velocity meter to control pipeline velocity. Using the new velocity meter, “A’s” operator was able to slow the engine down to 1350 rpm and maintain a target velocity between 12 and 14 fps. This resulted in the reduction of clear water vacuum to about 7 inches, enabled production to rise to about 300 tph and reduced the torrent that previously poured into the plant to a manageable flow. All of that good news was accompanied by a substantial decrease in energy consumption and pump/pipeline wear rate.

*Willard Says...*Success Story #3

It was obvious that the pump was moving much too much water; the cause of engine overload. After being put into practice, the solution to the problem caused engine and pump to become a matched team working in complete harmony. The dredge began to operate within its capabilities and produce sand and gravel at a rate sufficient to fill the process plant. Production costs dropped and single-shift production exceeded sales and there were smiles all around which continue to the present.

“A’s” joy would be complete if only they could get past having to constantly fix things on their “new, reconditioned” wreck of a dredge. And one pontoon is taking on water at an increasing rate.

Comment, question, criticism, information on products mentioned? Contact willard@willardsays.com