HYPACK
a xylem brand

Sounding Better!

Dredge Production in a Cutter Suction Dredge

By Cristhian Bermúdez

Recently I participated in an integration of some sensors to a cutter suction dredge. Some sensors were installed to provide information about dredge production, these kind of sensors are common in hopper dredges, but not everybody makes an investment in these kind of equipment for a cutter suction dredge.

In order to calculate dredge production, we installed the density sensor and the flowmeter. Normally the density is measured in Ton/m^3 and the flow in m/s. The density sensor can calculate the material density that is crossing through the pipe, computing the flow and the density is possible to give an estimated value of the production:

Production[t/h] = flow[m/s] * pipe diameter [m] * (density-1) [kg/m^3] * 0.218166

0.218166 = (1000*π) / (4*3600)

FIGURE 1. *Radiation Source and Density Sensor (left), Flowmeter (right),*

You should maintain the balance between the density and the flow. When the density is too high, the flow reduces. When the flow is high it means the material dredged would have too much water.

FIGURE 2. *Production Management*