

# From Landfill to Circular Use // Colombia

**“We talk a lot about sludge,” says Alfredo Marin, Technical Director of the SK Cali plant in Colombia, “In particular the sludge from our water treatment plant – it is our main output to landfill.”**

The sludge is residue from the mill process effluent and the raw water treatment plant. “The sludge from the raw water treatment is too wet with only 3% solid, it’s a huge weight to send to landfill,” says Alfredo.

Initially it was dewatered using an old screw press, but this only increased the solid content to 16%, so the mill’s management committed resources to solving the issue. “Several possible solutions were explored,” says Alfredo, “including initial filtration of river water to reduce solids such as grit, or high-tech solutions like centrifuges and membranes. But none guaranteed total separation at low cost.”

Even the simplest idea – improve the screw press – was problematic. A modern screw press can usually achieve 30% solids, but not for the particular composition of the Cali mill’s sludge, especially with seasonal variations caused by rainfall.

“So we worked with a supplier with expertise in this area,” explains Alfredo, “testing in a smaller pilot plant at 10% of the capacity that would eventually be needed. We were able to overcome problems on a smaller scale, and by the end of its run the pilot plant managed 50% sludge consistency even during the rainy season.”

Following this, the main screw press was installed in December 2019, and in its first month has achieved better than 50% consistency. “But it doesn’t stop there,” says Alfredo. “Following the Group’s ambition to move into circular systems, we have also been researching uses for the compressed sludge, like burning it in our lime kiln or combining it with unburned particles from our coal boiler to create a pelletised fuel which we could use in the same boiler.”

“There are other benefits too,” he adds, “the new process prevents spills – the sludge yard is the cleanest it has been for years!”

Sludge consistency

50%  
+34%

