

## WELCOME - WELCOME - WELCOME

The South African Coal Ash Association (SACAA) would like to welcome Kagiso Komane from Bravo Bricks as a new member. Kagiso is to start a brickmaking facility in the Nootgedacht/Muldersdrift area. May you find your membership valuable and open up many networking opportunities.

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### **SAPPI, farmers work together to save money (and the world)**

From its origin in South Africa, SAPPI has grown internationally and has operations in over 20 countries. In the USA the Cloquet SAPPI mill (Minnesota) can claim to be the greenest in the world. While there hasn't been an official trophy awarded by pulp and paper mills worldwide, Cloquet SAPPI Manager Mike Schultz is quite certain we have a winner here.

Gone are the days of the "smell" of the paper mill that permeated the air in town — that ended when the new, more efficient pulp mill was constructed 20 years ago, Schultz pointing out that the Cloquet pulp mill (which also now makes chemical cellulose) is still the newest pulp mill in North America.

What began years ago as an effort to prolong the life of the on-site landfill, the Cloquet mill has turned into one of the environmental success stories of the millennium. It's been a war fought on many fronts, most of them involving reusing waste that previously ended up in the landfill along with a shifting focus to using renewable energy as much as possible.

It all began with a wake-up call in 2004, at the rate the mill was putting material into its on-site landfill, officials calculated it had eight years of life left. The landfill was going to be full by 2012.

The expense of landfilling off-site would have been incredible so they started making a concerted effort to reduce their waste and went from 126 000 cubic yards of material to 95 000 within a year.

They got as low as around 18 000 tons of waste being landfilled in the early years of this decade before the transition to chemical cellulose brought that number back up to around 30 000 in 2014. Now they're back down to around 20,000.

**"Now, after 2016, we have 25 years of life yet (in the landfill), instead of being closed six years ago," Schultz said.**

The programme made the biggest difference is the mill's "beneficial use" program, which began around 2005. Local SAPPI officials work with Troy Salzer of the Carlton County Extension Agency and local farmers to take the mill's byproducts — lime mud and **boiler ash** — and put these materials on the farmers' fields to increase the soil pH to levels best suited for growing crops like alfalfa, grass and hay.

Environmental Manager Rob Schilling compared it to watching his grandmother take the **ash** from her fireplace and dump it in her garden when he was a little boy. "I always thought that was the craziest thing," he said, "but we're doing the exact same thing. Our boilers are like big fireplaces. We're burning virtually all wood and the ashes at the bottom of our boiler are like the ashes at the bottom of my grandma's fireplace. And it's a really important nutrient for agriculture."

Salzer acts as the go-between for the mill, the farmers and the state agencies that permit the programs. The lime mud is distributed through the Minnesota Department of Agriculture's ag-lime program. The **boiler ash** program is overseen by the Minnesota Pollution Control Agency.

"I help the farmers to better understand exactly what the product is, how it is produced and how it will benefit them," Salzer said. "Once they decide (to enroll), I test the soil and determine the application rate based on the soil test."

Salzer estimated about 100 farmers a year participate in the program, which helps make "the nutrients in the soil more available to the plants." Most farmers generally mix the two products, because the lime gets into the soil faster, while the ash has a more sustained release over time.

"It's been a fantastic program to be part of. I've seen yields go from three-fourths a ton per acre up to five or six tons per acre. In terms of bales, that is like going from two bales to 11 or 12 bales per acre. "We deliver and spread the material and the farmers see the benefits," Schilling said, "almost overnight."

It's certainly been helpful to Wrenshall-area dairy farmer Peter Laveau, who first started working with Minnesota Power and Light when MP&L began a similar program in 1991, then with SAPPI when the mill began to make similar products available. Schilling said both products serve a similar purposes in raising the pH of soil. The **boiler ash** has the added benefit of having micronutrients that are also important for crop growth and yield. It's almost like a multivitamin, he said.

"The lime and potassium really helps with developing a good stand of alfalfa," said Laveau, noting that he had purchased commercial fertilizers before. "But with the milk prices, sometimes I didn't have money to buy it and then I didn't have a good stand of alfalfa."

SAPPI doesn't charge the farmers for the wood ash or lime, and only recently started charging them a portion of the costs of transporting the byproducts to their farms and spreading it on the fields.

"It's always been a win-win," Salzer said. "And I think the transition to partial payment has helped the farmers value it even more. Otherwise they'd be paying for commercial fertilizer ... or going without. And SAPPI would be landfilling. That would be such a waste. The soil needs it."

"I'm glad SAPPI is doing it," Laveau said. "I hope they keep doing it. It's beneficial for us and for them I think."

Although the program started small, it has grown every year. "Last year, I believe we distributed **85 000 tons of ash** and lime through those programs," Schilling said. "That's 85 000 tons that would go into the landfill, but instead it went out to the local community and our local farmers to support them."

The mill has also implemented other changes to become more environmentally friendly and save money and landfill space. They quit burning gas and oil (and a little coal) and switched to renewables (the bark and connective "glue" of trees that isn't used for making paper). They stopped landfilling the paper sludge produced in the waste treatment plant and now they burn it to produce energy.

Schilling explains that the sludge produced by the mill is mostly fiber. "We dewater it, dry it, put it in the boilers and produce steam," he said. "We burn 35 000 tons of that sludge material per year rather than landfilling it."

A graph in the SAPPI North America Sustainability Report shows how the Cloquet SAPPI mill measures up to the United States in terms of its energy profile, and to U.S. pulp and paper mills. The average amount of renewable energy in the U.S. is 10 percent, versus 54.5 percent for pulp and paper mills, versus 80.4 percent for the SAPPI mill. "We have the highest percentage of renewable energy of any mill we know of," Schultz said. "Over 80 percent of the manufacturing produced is all from renewable sources ... on site here in Cloquet."

Schultz said the goal is to make the landfill last even longer than the currently predicted 25 years, to keep increasing that life span by decreasing waste.

Schilling takes it one step further. "We used to joke that we wanted to get the landfill past Mike's retirement date, then we joked that we wanted to get past my retirement date. Now my goal is really to get this to be a zero-waste facility and make the landfill last forever," Schilling said. "I don't know if we can be there tomorrow, but I think we can get there."

**Acknowledgement:**

**Renee van Hoeve – SAPPI Regional Environmental Manager Southern Africa – sharing the SAPPI Cloquet Minnesota innovative story.**



### **SACAA exhibition at the ASPASA business breakfast**

ASPASA (Aggregate and Sand Producers Association of Southern Africa) hosted a Business Breakfast for their members on Friday, 30 June 2017 at the Valverde Country Hotel and Conference venue. The guest speaker was Justice Malala who hosts The Justice Factor programme on eNCA.

### **“What next for South Africa and the Industry?”**

Summary: Since December 2015 South African politics have been in overdrive. The uncertainty regarding the ANC leadership succession and heated socio-political debates have ratcheted up. Civil Society has been called to action to protect the constitution of the country. What are the scenarios for South Africa’s Future? Will we follow the low road, choose the high road or just muddle along? What will industry’s role – and impact – be?

The talk was very insightful of the current political and economic outlook as well as the behind-the-scenes factors influencing the situation from a political point of view.

There were approximately 70 delegates present and the SACAA was invited to host an exhibit that gave our association some coverage.



**Mark Hunter – SACAA representative**