VN FutureMilk Meets Environmental Regulations with McLanahan Sand-Manure Separator

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>
> Vaughan Pearce
> VN Futuremilk

VN Futuremilk Co. Ltd operates a 1,500-cow dairy located in Son Duong, Tuyên Quang, Vietnam, approximately 70 miles northeast of the capital city of Hanoi. The dairy was purchased in 2008 by a group of Australian investors who implemented world-leading technology and dairy practices to produce some of the best milk in the country.

When the dairy was originally built, before VN Futuremilk's involvement, it was designed with freestalls to accommodate sand bedding. When VN Futuremilk took over operations of the dairy, they contemplated changing the bedding material. However, they decided to commit to using sand because of the health benefits it provides to the cows and the advantages it offers in terms of milk quality and production.

Challenge

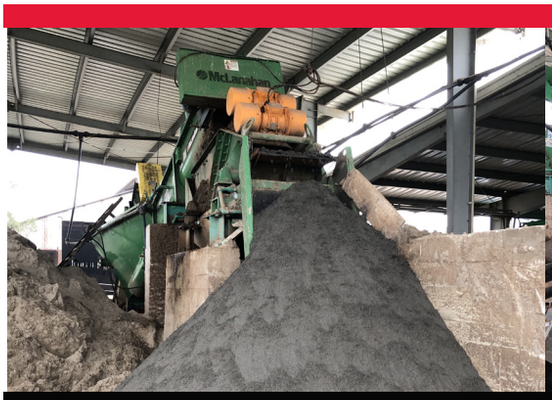
Sand bedding at the VN Futuremilk dairy proved to have limitations from an environmental perspective, though, as the sand-laden manure blocked waterways and dams. Being located in a tropical area with frequent heavy rainfall, blocked waterways and dams posed the risk of polluting the water supply with the cows' manure.

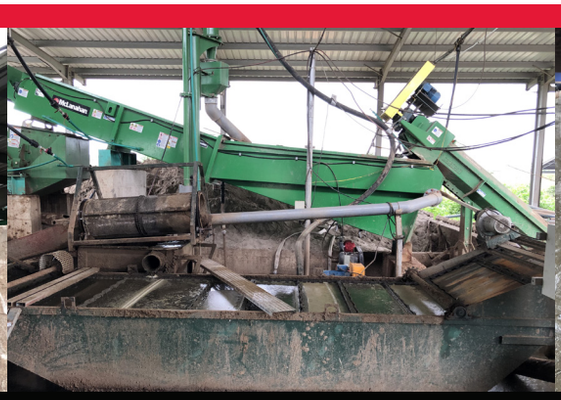
"The challenge was very much to protect the water supply," said Vaughan Pearce, managing director of VN Futuremilk.

When Vaughan assumed the role of managing director in 2013, he had a vision for the dairy of improved manure management with respect to the environment. His goal was to find a way to separate the waste into three parts: recycled liquid, recycled sand and a manure fiber product that could be used or sold as compost material.

Solution

Vaughan reached out to several agricultural equipment suppliers in the United States and Canada for help realizing his vision. He sent out many inquiries, but only McLanahan responded. Two representatives from McLanahan's agricultural team offered to travel to Vietnam to meet with Vaughan,





assess the situation at the dairy and recommend a solution.

"I knew it was a commitment to fly and invest time and money in me," Vaughan said. "To fly halfway around the world to see us in Vietnam, I knew I had to trust these guys."

To help VN Futuremilk achieve their manure management goals and reduce their environmental impact, McLanahan proposed a Sand-Manure Separation System consisting of an Inclined Manure Auger, Pump, Sand-Manure Separator, Agricultural Hydrocyclone and Agricultural Dewatering Screen to separate the sand from the manure.

Sand-laden manure is scraped from the barns' alleys into a collection pit. The Inclined Auger is installed into the collection pit and meters the sand-laden manure from the pit to the washer box of the Sand-Manure Separator. At this time, recycled water is added to dilute the manure and allow the sand particles to settle out.

A rotating screw shaft pulls the sand out of the washer box and carries it up an inclined tub, where fresh water from spray bars rinses the sand along the way. Fine sand particles that remain in the diluted manure are recovered with an Agricultural Hydrocyclone and discharged onto the rotating screw shaft with the washed sand for discharge onto an Agricultural Dewatering Screen.

The Agricultural Dewatering Screen removes excess liquid as well as any small organic fibers that are present in that liquid, resulting in a clean, drip-free and recycled sand product.

Results

Since installing the McLanahan Sand-Manure Separation System, VN Futuremilk has been able to minimize their impact on the environment by removing the sand from the liquid manure effluent. The sand-free liquid manure is then sent to a reed bed filtration system for treatment, thus allowing them to obtain a recycled liquid — one of Vaughan's three goals.

The system also helps VN Futuremilk operate their dairy more efficiently. Where they were spending sometimes more than $1,000 a week on sand, the Sand-Manure Separator allows them to recycle their sand bedding for reuse — another one of Vaughan's goals. Vaughan said the system consistently recovers 85-90% of the sand, saving VN Futuremilk approximately $50,000 a year on buying new sand.

While VN Futuremilk is still continuing to make improvements to the dairy, installing the Sand-Manure Separation System was a big step in realizing Vaughan's dream for its future.

"Where we were to where we are, there's absolutely a difference," Vaughan said. "The original vision I had six years ago is now a reality." Since Vaughan's initial inquiry in 2013, McLanahan has remained committed to helping VN Futuremilk meet the goals for their dairy. From technical support to inquiry response, Vaughan said he has enjoyed a fantastic relationship with McLanahan over the years.

"It's just one of trust," Vaughan shared. "We rely on them, and we trust them."