

Cleaner Water. Cleaner Cows. Better Milk.

How AgCentral Co-op Helped Long Farms Dairy Transform Their Manure Management System

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At **Long Farms Dairy in Glasgow, Kentucky**, a flush system designed to improve efficiency had started creating an unexpected problem.

The alleys weren't getting clean enough.

Long Farms operates a standard three-stage lagoon flush system. A pontoon pump pulls water from the lagoons into a flush tank, and several times a day — typically three to four — that water is released down the alleys to remove manure. It's an efficient method widely used across progressive dairies.

But there was one issue.

"If you're flushing with dirty water, you're still going to have dirty cows," explains **Zack Burris of AgCentral Co-op**, who served as spokesperson and project manager.

The recycled water wasn't clean enough by the time it returned to the flush tank. Suspended solids were circulating back through the system. That meant alleys weren't fully clearing, cows weren't as clean as they should be, and milk quality bonuses were slipping away.

For a dairy, milk quality premiums are significant. Losing them isn't just frustrating — it directly impacts profitability.

Long Farms needed a better solution than simply flushing more often.



Designing the Right Fix

After evaluating the lagoon system and flush flow rates, AgCentral determined the core problem wasn't the flush process itself. The issue was the solids staying in suspension too long and returning through the system.

The solution: mechanically remove the solids before water cycles back to the lagoons.

AgCentral designed a manure separation system centered around a custom-sized 20' x 20' x 12' deep pit engineered specifically for the farm's flush volume. Each time cows leave for milking and an alley is flushed, the water-manure mixture flows first through a sand lane, where sand settles out for reuse as bedding. The remaining slurry then enters the central pit.

Two heavy-duty gear agitators homogenize the mixture to ensure consistent separation. Once the pit reaches a programmed level, sensors automatically activate the system.

"This whole system runs based on level," Burris explains. "When the pit fills, it turns on. When it gets low enough, it shuts itself off so it never runs dry."

Dual Screw Press Separation

The homogenized slurry is pumped through a six-inch pipe into a 12-inch ballast tank. Rather than force-feeding the separators, the ballast allows for gravity flow — a design feature that improves consistency and reduces strain on the equipment.

A computerized flow meter monitors thickness and adjusts output to maintain ideal separation performance.

From there, the slurry feeds into two Bauer Fan Model 1040 screw press separators manufactured by the **Bauer Group**. Inside each unit, a rotating screw presses material against screens, squeezing water out the bottom while solids exit the front.

Adjustable counterweights allow operators to control pressure and dryness levels. "At Long Farms, we're getting about 40% moisture in the dry matter," Burris says.

That consistency is key.



Turning Waste into Value

The separated solids are now easy to manage. Instead of hauling liquid manure — an expensive and labor-intensive process — Long Farms loads dry solids into a spreader truck and applies them to crop fields more efficiently.

At other dairies, similar solids can be composted and reused as bedding. The flexibility adds long-term value.

Meanwhile, the separated water returns to the first lagoon stage. From there, it progresses through the second and third lagoons, becoming nearly as clear as pond water before being reused for flushing.

And that made the difference.

The Results: Restored Bonuses and Cleaner Cows

Once the flush water improved, the alleys cleaned better. Cleaner alleys meant cleaner udders. Cleaner udders meant improved milk quality.

The farm regained its milk quality bonuses.

“It all goes back to water quality,” Burriss explains. “When the water’s clean, everything else works the way it’s supposed to.”

Beyond milk premiums, Long Farms also gained:

- **Lower manure hauling costs**
- **Reusable sand bedding**
- **Automated monitoring and reduced labor**
- **Improved lagoon clarity**

The entire system is controlled from a central electrical room, with full smart-start automation and app access. If there’s an issue, the farm manager can shut down equipment remotely from a phone.



A Partnership Approach

This wasn't an equipment sale. It was a collaborative design process between Long Farms Dairy and AgCentral Co-op.

AgCentral evaluated flush frequency, lagoon size, pump capacity, and manure consistency before engineering a complete system that fit the farm's daily workflow.

"It's about building something that works for how they operate every day," Burris says. "Not just selling a separator."

A Model for Kentucky Dairy

As dairy operations continue to focus on milk quality, efficiency, and environmental responsibility, manure separation systems like this are becoming strategic investments rather than optional upgrades.

At Long Farms Dairy, cleaner water led to cleaner cows. Cleaner cows led to better milk. And better milk restored profitability.

For Zack Burris and the team at AgCentral Co-op, it's a reminder of what strong agricultural partnerships can accomplish.

When you solve the root problem, everything downstream improves.

