PRIME SOLUTION

CASE STUDY: ROTARY FAN PRESS

BABA Compliant

MADE IN USA

DEWATERING PERFORMANCE SIMPLIFIED

10 YEARS IN
COMPACT FOOTPRINT. SERIOUS DEWATERING PERFORMANCE.
HOW NORTH BREVARD REPLACED AN AGING CENTRIFUGE WITH A ROTARY FAN PRESS® THAT OPERATORS SAY "DOES WHAT IT SAYS IT DOES."

SEGMENT
North Brevard Wastewater Treatment Facility

APPLICATION
Municipal biosolids dewatering



SOLUTION Rotary Fan Press

LOCATION
Mims, FL

"The cake coming out in blocks – it is like bricks"
– Mark Farias, Chief Operator, North Brevard

The Story in One Minute

North Brevard needed to replace a centrifuge that had reached the end of its useful life. The facility evaluated multiple dewatering approaches, including screw presses and belt filter presses. The selection ultimately came down to a practical combination of footprint, performance, mechanical simplicity, lifecycle considerations, noise, and maintainability.

The Rotary Fan Press® won the pilot comparison – and, roughly a decade later, the customer still describes it as a good machine that has held up, runs with very little downtime, and performs better than the centrifuge it replaced. **The customer has already recommended the technology for other county plants.**

The Challenge: Replace Aging Equipment Without Creating a Bigger Problem

The facility's hybrid centrifuge had operated beyond its useful life. While replacement options were being evaluated, North Brevard hauled sludge off-site for several months – an expensive interim solution.

The team tested portable process equipment and considered multiple technologies. Several were eliminated for reasons that matter to municipal facilities everywhere:

- Footprint constraints and the amount of space required for installation
- Local landfill requirements and the need to produce a sufficiently dewatered cake
- Construction cost and long-term upkeep
- Operator cleanup and maintenance burden
- Mechanical complexity and replacement-part considerations

Why the Rotary Fan Press®

North Brevard's selection criteria were not based on one headline number. The Rotary Fan Press® differentiated itself on the combination of size, cake performance, and simple mechanics.

What mattered	What North Brevard saw
Compact footprint	**Footprint was repeatedly cited as a primary reason for selection.**
Cake performance	**The customer reported the screw press tested did not produce the cake quality achieved by the Rotary Fan Press®.**
Mechanical simplicity	**Operators liked the slow-moving mechanism and viewed it as less complex than alternatives.**
Lower cleanup burden	**Belt press cleanup was viewed as extensive, with belt replacement adding cost.**
Maintainability	**The facility valued relatively common replacement motors and repair considerations.**
Noise	**Low noise was one of the original selection factors.**
Operational flexibility	**Operators value the ability to start and stop the press as needed.**

A Decade Later: The Performance Story

The most compelling proof point is longevity. In the updated operator interview, the customer said the machine has held up for about 10 years and characterized overall experience as positive. They also said the Rotary Fan Press® outperformed the other machines piloted and performs better than the centrifuge it replaced.

VERY LITTLE DOWNTIME	DENSE, VISIBLE CAKE	OPERATOR FRIENDLY
"There isn't really any. It runs."	Cake described as "like bricks" and "like sand."	Less operator intervention can mean less maintenance and fewer opportunities for error.

Operators also noted that the system uses slightly less energy than the previous approach, although energy savings were not the primary decision driver. More important operationally was the slow-moving design, reliable dewatering physics, and the ability to run without constant operator presence after process refinements such as pressure regulation.

"From a physics standpoint, the machine works good. Better than the centrifuge. Outperformed all other machines we piloted."

What Operators Noticed: Rotary Fan Press® Versus Other Technologies	
Versus screw press:	North Brevard viewed the Rotary Fan Press® as less complex, more compact, and capable of delivering a better cake in its pilot evaluation.
Versus belt press:	The facility specifically cited extensive belt-press cleanup and the cost of replacing belts.
Versus centrifuge:	The existing centrifuge had reached end of life. The customer later characterized the Rotary Fan Press® as performing better and appreciated the slower-moving mechanical design.

Features That Matter on a Real Plant Floor

Start/stop flexibility: The press can be started and shut down as operating needs change, giving the plant useful control over dewatering schedules.

Reduced operator dependence: Process improvements that move routine decisions out of the operator's hands were viewed positively because they can reduce maintenance and error.

Slow-moving components: The customer repeatedly cited slow mechanical movement as a favorable maintenance and reliability characteristic.

Serviceable components: The original selection considered common replacement motors and practical repair requirements.

Compact layout: The smaller footprint made the technology easier to fit into the existing facility and simplified material handling considerations.

The Candid Part: Good Equipment Still Needs Good Project Execution

North Brevard's feedback was not uniformly glowing – which is precisely what makes the case useful. The facility identified several installation and support lessons involving equipment layout, under-drain/cleanup provisions, access to cleanout points, ancillary maintenance tools, communication, and replacement-part lead times.

Those comments point to an important industry lesson: a dewatering system is more than the press itself. Layout, access, drain strategy, startup communication, operator training, and spare-parts planning can materially affect the ownership experience.

For future projects, Prime Solution's takeaway is simple: communicate, communicate, communicate. The equipment performance earned the customer's confidence; better project communication and maintainability planning are what turn strong equipment into an even stronger long-term installation.

Why This Case Matters for Municipal Dewatering

- Pilot performance should be evaluated alongside footprint, cleanup, maintainability, and long-term mechanical simplicity – not cake solids alone.
- A compact dewatering system can be especially valuable in retrofit projects where existing rooms and conveyance layouts limit options.
- Slow-moving mechanics and low operator attention can translate into practical day-to-day value even when energy savings are not the primary economic driver.
- Ten-year operating history carries more weight than a startup snapshot. North Brevard's machine has endured, and the customer has recommended the technology to other county facilities.
- Design details around drains, cleanouts, component placement, spare parts, and maintenance tooling should be addressed early in project development.

"It does what it says it does."

A simple comment from Mark, the Chief Operator, – and perhaps the most important measure of a dewatering machine after a decade in service.



PRIME ROTARY FAN PRESS® *patented*

- Lowest maintenance and cost
- Expandable throughput
- High cake solids and capture rates
- Proven technology
- Easily automated
- Easy start up and shut down
- Retro-fit without expansion
- Low speed

FAMILY FARM TO TRUSTED NAME



With over 40 years of experience and more than 250 installations worldwide.

Prime Solution is recognized throughout the wastewater treatment industry as one of the most reliable manufacturers, known for delivering superior performance and unmatched customer service. From its humble beginnings in a Midwest barn, Prime has grown into a trusted name with a proven record of excellence, providing advanced, operator-friendly dewatering solutions.

Our mission is simple: to design and manufacture systems that consistently meet or exceed customer expectations. By focusing on reliability, ease of operation, and measurable performance, Prime continues to set the standard for effective, sustainable dewatering solutions.



- Headquartered in Otsego, MI
- Sourced, assembled, and manufactured in the US
- 40+ years of experience in the industry
- Skid, press only, trailer and container systems available
- Feasibility testing
- On-site pilots
- Dedicated customer service

More time running, less money spent.

We engineer from an operator's perspective – simple is better.

At Prime Solution, we design for maximum performance and long-term reliability. As sludge processes and dewatering methods have evolved, the Rotary Fan Press® has continuously adapted to meet new requirements while exceeding industry expectations. Supported by more than 40 patents worldwide, our engineering team and continuous improvement specialists actively engage with customers and industry leaders, transforming feedback into innovative design enhancements.

The result is a system that combines technical excellence with real-world performance—delivering higher efficiency, greater reliability, and superior value for operators and facilities alike.

The Rotary Fan Press® utilizes patented screen technology that combines a simple pressure differential with controlled friction resistance to achieve superior dewatering performance at a lower operating cost and with extended service life. Operating at speeds of ≤2 RPM, the fully enclosed system minimizes wear on bearings, gears, seals, and motors. Unlike higher-RPM equipment that generates vibration—leading to fatigue, misalignment, and excessive noise—the Rotary Fan Press delivers quiet, stable, and highly reliable performance.

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Build America, Buy America Act – Made in the USA

On May 14, 2022, the requirements for The Build America, Buy America (BABA) officially took effect. Prime Solution's equipment has always been designed, sourced, and manufactured in the US. We believe in supporting our fellow Americans through strengthening the economy and providing jobs that allow people to earn a living wage and balance their work/family responsibilities.

Prime Solution's products consistently meet BABA standards without the need for waivers or added costs.

To schedule a demo or begin the ordering process for the Rotary Fan Press® call (269) 694-6666.

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