

Nutrien

Increasing Throughput and Reliability
With a Custom Fertilizer Blending System



PROJECT OVERVIEW

The Nutrien Barrhead fertilizer blending facility in Alberta plays a critical role in supplying custom fertilizer blends to local growers. In 2023, Nutrien partnered with Norstar and Credence Construction (a Norstar dealer) to replace an aging shed-based blending operation with a modern, high-speed, closed-loop fertilizer blending system.

Norstar worked closely with Credence Construction to design and deliver a 10-bin fertilizer blending system, complete with conveying equipment, structural supports, catwalks, and towers – providing Nutrien with improved safety, efficiency, and throughput while minimizing product loss.

THE NEED

Nutrien's existing shed system dated back to the early 1980s and was reaching the end of its useful life. The layout required skid steers to move product for blending, creating inefficiencies, safety concerns, and increasing labor requirements.

The operation faced several challenges:

- Aging infrastructure that was becoming unsafe
- Manual handling processes that were slow and labor-intensive
- Product loss due to moisture ingress and fertilizer caking
- Increasing pressure during peak season to reduce customer wait times

“We've used Norstar for a long time. We knew what we were getting — good equipment at the right price point.”

— Jordan Bugg, Credence Construction

THE NORSTAR SOLUTION

Working alongside Credence Construction, Norstar designed a custom-configured, high speed, closed-loop fertilizer blending system tailored to the Barrhead site's throughput and operational demands and peak seasonal volumes.

KEY SYSTEM COMPONENTS AND PERFORMANCE INCLUDE:

- » **Raw Product Inloading (150 MTPH):** Raw fertilizer is received via a screw conveyor and transferred into a bucket elevator. Product is distributed by four overhead drag conveyors into ten dedicated holding bins.
- » **Blending and Load-Out (200 MTPH):** Slide gates beneath each bin feed material into drag conveyors, a blending screw conveyor, load-out bucket elevator and hoppers before discharging into farmers' trucks.
- » **Optimized Capacity and Power:** Capacities and drive systems were engineered around two different fertilizer densities, ensuring the system consistently achieves required blend speeds.
- » **Structural Integration:** Norstar supplied all structural elements for the facility, including catwalks and bucket elevator support towers, providing safe access for operation and maintenance.
- » From the dealer's perspective, Norstar's responsiveness and reliability were key factors in moving forward quickly.

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RESULTS & IMPACT

The new blending system has delivered immediate and measurable improvements across safety, efficiency, and customer service.

OPERATIONAL IMPROVEMENTS :

- » 5x faster blending speeds compared to the previous shed system
- » Minimal product wastage due to a closed-loop design
- » Improved reliability with no major breakdowns to date
- » Safer operation with proper guarding and accessible equipment



“With the old shed, moisture could get in and fertilizer would cake up. That was a complete loss. This system is far more reliable.”

— Steve Properzi, Nutrien Barrhead

THE EXPERIENCE WITH NORSTAR

Throughout the whole project, communication across all parties remained consistent and effective. Credence led construction, while Norstar provided design support and dependable equipment delivery.

Both Nutrien and Credence highlighted the balance Norstar strikes between quality, performance, and cost.

Through close collaboration with Credence Construction, Norstar delivered a fertilizer blending system that meets Nutrien’s demanding seasonal throughput requirements. Norstar custom configured every element of the system to prioritize speed, durability, and operational efficiency.

The result is a high-performing facility that reduces maintenance risk, minimizes product loss, and significantly improves customer turnaround times.

This project exemplifies Norstar’s ability to work seamlessly with dealers and end users to transform complex operational requirements into practical, future-ready material handling solutions that support performance today and sustained value into the future.