

More Spacious Quarters

KANSAS COOPERATIVE MOVES GRAIN OPERATIONS FROM IN TOWN TO EDGE OF TOWN



MKC

Moundridge, KS • 620-345-6328

Founded: 1965

Storage capacity: 35 million bushels at 41 locations

Annual volume: 34 million bushels

Annual revenues: \$500 million

Number of members: 9,400

Number of employees: 325

Crops handled: Corn, soybeans, sorghum, hard red winter wheat, sunflowers

Services: Grain handling and merchandising, feed, agronomy, energy, risk management, precision ag

Key personnel at Benton:

- Erik Lange, vice president-southern operations
- Spencer Reames, location manager
- Bryce Clark, local service specialist

Supplier List

Aeration fans.....AIRLANCO
Bearing sensors..... CMC Industrial Electronics

Bin sweepsHutchinson/Mayrath

Bucket elevators..... InterSystems

Catwalks LeMar Industries Corp.

Contractor HABCO Inc.

Control system..... Kasa Controls

Conveyors (belt).....Hi Roller Conveyors

Conveyors (drag) InterSystems

Distributor..... InterSystems

Electrical contractor...Kansas Electric

Electrical engineeringPower Systems Inc.

Elevator buckets Maxi-Lift Inc.

Grain temp system ... Rolfes@Boone

Level indicators..... Monitor Technologies LLC

Millwright..... HABC Inc.

Motion sensors CMC Industrial Electronics

Steel storage..... GSI

Temporary storage..LeMar Industries Corp.

Tower support systemLeMar Industries Corp.

Truck probe..... Gamet Mfg. Inc.

Truck scale.....Mettler Toledo, LLC



New MKC grain elevator on the outskirts of Benton, KS has 930,000 bushels of upright GSI steel storage and another 560,000 in a LeMar temporary storage bunker. Aerial photo by Steve Brown Photography, Wichita, KS.

A grain elevator has operated in the town of Benton, KS, just northeast of Wichita, since a wood house was built there in the early 1900s and steel tanks were added since the 1960s. MKC (Mid-Kansas Cooperative) has operated the location at 103 N. Main St. (316-778-1181) since at least 2001.

With the added storage, the elevator's biggest challenge was that it had grown to cover a full city block of Benton and had no more space to grow, says Erik Lange, MKC vice president-southern operations. So in 2013, the coop board of directors voted to build a new elevator on the northern edge of town.

MKC purchased a site from a local landowner near the intersection of State Highway 254, a four-lane limited access highway, and a well-maintained county blacktop. Lange notes that a Union Pacific (UP) rail line runs about 400 feet to the south of the property, should the cooperative decide to begin loading rail at Benton in the future. "The site can accommodate a 1% grade, which the UP requires for a loop track," he says.

The cooperative took bids on a 930,000-bushel all-steel facility and awarded the contract for an undisclosed sum to



Erik Lange (left), MKC vice president-southern operations, and Spencer Reames, Benton location manager. Ground level photos by Ed Zdrojewski.

HABCO Inc., Salina, KS (785-823-0440). Also contributing to the project were:

- ASM Engineering & Consultants LLC, Andover, KS (316-260-5895), which performed civil engineering.

- Kansas Electric, Newton, KS (316-283-4750), served as the electrical contractor.

- Kasa Controls, Salina (800-755-5272), provided automation systems.

Construction began in November 2013, and the new elevator became operational in June 2014, in time for wheat harvest.

Grain Storage

Virtually all of the facility's upright storage is contained in three GSI 309,000-bushel corrugated steel tanks standing 78 feet in diameter, 69 feet tall at the eaves, and 96 feet tall at the peak.

These flat-bottom tanks have flat floors, outside stiffeners, Hutchinson Mayrath 12-inch sweep augers, 16-cable Rolfes@Boone grain temperature monitoring systems, and Monitor Technologies level indicators.

A set of four AIRLANCO 25-hp centrifugal fans per tank provide 1/6 cfm per bushel of aeration on coarse grains.

In addition to upright storage, the facility includes a 130-foot-x-340-foot oval temporary storage bunker designed to hold up to 560,000 bushels. This structure features four-foot LeMar sidewalls, a compressed kiln dust/fly ash floor, and six AIRLANCO 10-hp axial fans.

Handling Equipment

Incoming trucks are weighed on an 80-foot Mettler-Toledo above ground truck scale and sampled with a Gamet Apollo truck probe. Inside the adjacent



Grain handling equipment includes a pair of 15,000-bph InterSystems receiving legs supported by a LeMar tower and a 2,500-bushel truck-loading surge tank.

office building, employees grade samples using a GAC 2500 moisture meter and a Mid-Continent Industries Kicker dockage tester.

Drivers then proceed to one of two outside 1,200-bushel mechanical receiving pits. These feed a pair of 15,000-bph InterSystems receiving legs equipped with Maxi-Lift 18x8 CC-MAX buckets mounted on 20-inch belts. These are enclosed in a 20-foot-x-20-foot LeMar support tower equipped with a staircase that combines switchback and wraparound features.

The legs deposit grain into a six-duct InterSystems swing-type double distributor. From there, a set of 15,000-bph Hi Roller enclosed belt conveyors with 30-inch belts carry grain out to upright storage.

Two of the three GSI tanks empty via gravity into the receiving leg boots. The third empties onto an InterSystems above ground 10,000-bph drag conveyor running back to the legs.

Outbound trucks are loaded via side-draws on the tanks or by a 2,500-bushel overhead surge tank, fed by one duct from the distributor. The surge tank was custom fabricated by Dauer Welding.

The entire elevator is under control of a Kasa automation system utilizing CMC hazard monitoring sensors.

Ed Zdrojewski, editor