

New Terminal for New Markets

GROWMARK AFFILIATE BUILDS A LOOP TRACK SHUTTLE LOADER IN WESTERN ILLINOIS



Western Grain Marketing LLC
Rushville, IL • 217-322-3306

Founded: 2008
Storage capacity: 24 million bushels at 17 locations
Annual volume: 50-60 million bushels
Number of employees: 51
Crops handled: Corn, soybeans, soft red winter wheat

Key personnel:

- Gordon Miller, general manager
- Terry Rouse, shuttle location mgr.
- Debbie Thompson, grain originator
- Brian Turner, operations lead

Supplier List

- Aeration fans**..... Chief Agri Industrial Division
- Aeration system**..... Safe-Grain Inc.
- Bin sweeps** Springland Mfg., Sudenga Industries Inc.
- Bucket elevators**..... Union Iron Works
- Bulk weigh scale**..... CompuWeigh
- Catwalks** LeMar Industries Inc.
- Concrete supplier**..... Mulford Concrete Inc.
- Concrete tanks**..... Hoffmann Inc.
- Conveyors (belt)**..... Hi Roller
- Conveyors (drag)** UTW
- Distributors**..... UIW
- Dust collection system** AIRLANCO
- Electrical contractor**..... KDJ Sales & Service Inc.
- Elevator buckets** Tapco Inc.
- Grain dryer** Zimmerman
- Manlift**..... PMI
- Millwright**..... TCR Systems Inc.
- Rail construction** Ameritrack Railroad Contractors Inc.
- Sampler**..... Gamet Mfg. Co.
- Scalper** Baasch & Sons Inc.
- Steel storage**..... Chief
- Tower support system** LeMar
- Truck probe** Gamet Mfg. Co.
- Truck scales**..... Rice Lake Weighing Systems via Walz Scale



Western Grain Marketing LLC's new 4.6-million bushel rail terminal north of Adair, IL, is designed to load 110-car shuttle trains on the Burlington Northern Santa Fe. Aerial photos by B&M Studio of Photography, Pekin, IL.

As with many very large projects, Western Grain Marketing LLC's new 4.6-million-bushel rail loading terminal near Adair, IL (309-653-2650), was the result of a business study.

The study was initiated by several GROW-MARK-affiliated member cooperatives in western Illinois. Their trade territory includes a productive agricultural area between the Illinois and Mississippi rivers, with their primary market being the Illinois River for export

"We were seeing a lot of changes coming to our markets," says Gordon Miller, then grain department manager for Two Rivers FS, now general manager of Western Grain

Marketing. "We had a number of proposed ethanol plants being talked about at Beardstown, Griggsville, Quincy, and one actually under construction at Canton, IL that possibly would source a lot of grain from our customers. Most of those markets failed to materialize, but we continued to pursue a proactive strategy in finding new markets for our customers' grain to make them less dependent on any one market."

Under the circumstances, the best strategy appeared to be finding additional markets for member producers. Rail, particularly the Burlington Northern Santa Fe (BNSF) could provide access to feed markets in the South-



High-altitude view of the Western Grain Marketing property showing a 7,690-foot loop track for continuous rail loading without decoupling.

west, as well as the Pacific Northwest, southern California, and Mexico.

In 2008, the grain operation of Two Rivers FS joined with its parent, GROWMARK, and the grain departments of two other affiliated cooperatives – Riverland FS and West Central FS – to form Western Grain Marketing. The goal was to build a rail terminal with a loop track for loading shuttle



CompuWeigh bulk weigh loadout scale is designed to load a shuttle train, under normal conditions, in less than 10 hours. Ground level photos by Ed Zdrojewski.

trains, plus handling all merchandising from a central office in Rushville (217-322-3306).

The addition of a rail terminal allows the new operation access to river, rail, and truck-to-processor markets, whatever works out the best for member producers.

The New Terminal

Western Grain Marketing purchased a 150-acre site near the center of its grain origination territory, at the intersection of U.S Highway 136 and State Highway 41, two miles north of Adair. The site offers access to a BNSF main line, and Miller notes that the proposed extension of the State Highway 336 four-lane between Quincy, IL and Peoria, IL will have an interchange 2-1/2 miles north of the facility.

GROWMARK's own engineering and construction operation in Bloomington (309-557-6334) served as general contractor on the project. Other major firms taking part:

- Laverdiere Construction Inc., Macomb, IL (309-837-1258), prepared the railbed and Ameritrack Railroad Contractors Inc., Frankfort, IN (765-659-2111), constructed the 7,690-foot loop track from 132-lb. rail and wood ties.

- TCR Systems Inc., Decatur, IL (217-877-5622), served as the project's millwright.

- KDJ Sales & Service Inc., Mackinaw, IL (309-359-3611), served as electrical contractor and installed the facility's PLC-based control system.

- Hoffmann Inc., Muscatine, IA (563-263-4733), constructed the ter-

minal's two 500,000-bushel jumpform concrete tanks.

- Cross Country Construction, Elbow Lake, MN (218-770-2290), constructed the facility's steel storage, including three huge Chief Titan 1.1-million-bushel tanks.

- Mulford Concrete, Hampton, IA (641-456-5200), constructed concrete foundations.

Construction began in the summer of 2008. The facility was expected to begin loading trains in September 2009.

Storage Mix

Shuttle Location Manager Terry Rouse explains that Western Grain Marketing deliberately chose a mix of concrete and steel storage. With the projected loading of 90 trains per year, concrete was the choice for short-term storage, since it would have the strength to stand up to that many turns. For long-term storage with fewer turns, cost

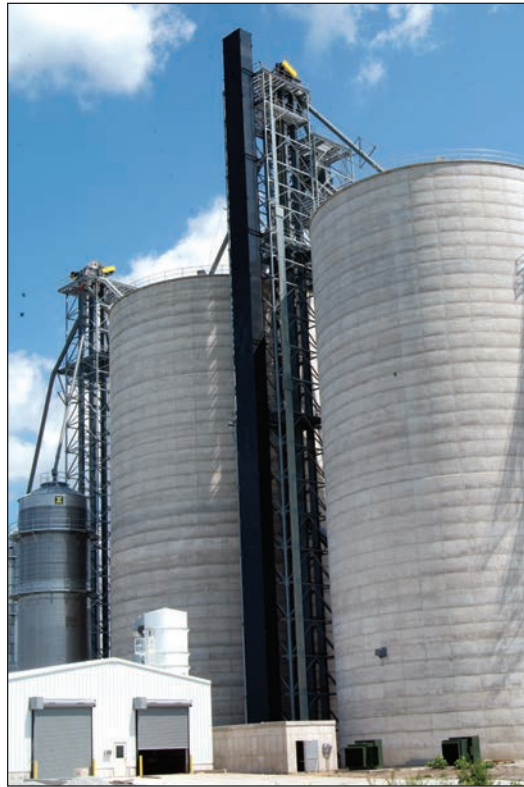


LP-gas Zimmerman tower dryer has the capacity to dry 5,000 bph of grain at five points of moisture removal.

per bushel became the determining factor, so the company went with the largest steel tanks that were practical for the site.

The two 500,000-bushel Hoffmann jumpform concrete tanks are 74 feet in diameter and 154 feet tall. These tanks have no sweep augers but are equipped with Bobcat doors for cleanout. Grain temperature is not monitored, but the tanks are aerated at 1/10 cfm per bushel with a pair of 40-hp Chicago Blower centrifugal fans per tank.

The Chief Titan corrugated steel tanks, holding 1.1 million bushels each, stand 155 feet in diameter, 53 feet tall at the eaves, and 95 feet tall at the peaks. These flat-bottom tanks are outfitted with outside stiffeners and 16-inch Springland sweep augers. These also are aerated at 1/10 cfm per bushel, with six 20-hp Caldwell centrifugal fans per tank.



From left, dual enclosed mechanical receiving pits, two Hoffmann jumpform concrete tanks holding 500,000 bushels each, and between the tanks, two 20,000-bph Union Iron legs feeding two Union iron rotary distributors.

Grain Handling

Incoming truckers stop at a kiosk about 300 feet ahead of the scale to untarp and enter their truck information using an RFID tag reader. Following that, truckloads are sampled with a Gamet Apollo truck probe. While the sample is tested, the truck is weighed on an inbound 70-foot pitless Rice Lake scale from Walz Scale located adjacent to the office building.

After weighing, the driver proceeds to one of two side-by-side enclosed 1,000-bushel mechanical receiving pits. After dumping the load, the driver pulls onto an outbound scale and receives a scale ticket from a cab-high printer located next to the scale.

The pits feed a pair of 20,000-bph Union Iron legs, which are outfitted with 20x8 Tapco CCHD heavy-duty buckets mounted on 22-inch belts from All-States Industries.

Each leg feeds a Union Iron eight-hole, 360-degree, double-inlet rotary distributor, which provides flexibility for each leg to deliver grain to either concrete storage, steel storage, loadout, or the drying complex. The operator has the option of

running grain through a 40,000-bph Intersystems gravity cleaner. Then, overhead 35,000-bph Union Iron drag

conveyors carry grain to its destination around the facility.

The steel tanks empty onto below-ground 20,000-bph Hi Roller enclosed belt conveyors, which in turn, feed another 20,000-bph Hi Roller belt running back to the receiving pit area. From there, grain can be routed back into one of the receiving legs or a 50,000-bph Union Iron loadout leg.

The concrete tanks empty onto 50,000-bph Hi Roller belt conveyors that provide the same options for routing grain.

The loadout leg is outfitted with three rows of 18x8 Tapco CCHD heavy-duty buckets on a 60-inch belt. This leg also has twin 200-hp WEG motors with Dodge drives, allowing the leg to continue operating at reduced speed, if one of the motors is down for maintenance or repair.

Train loading is accomplished with a 50,000-bph CompuWeigh bulk weigh loadout scale under the control of that company's fully-automated GMS-SMART controls and RFID railcar system. The bulkweigher also has a Gamet sampler for origin grades.

The operator can run grain through a Baasch & Sons scalper prior to loadout to meet end user specifications.

When completed, the loadout area will have a TCR Systems trolley-type lanyard system running approximately five railcar lengths.

Dryer Complex

Wet grain can be routed to a 55-foot-diameter, 170,000-bushel Chief wet tank adjacent to an LP-fired 5,000-bph Zimmerman tower dryer. One of the two concrete tanks also can double as a wet tank.

The dryer is served by 20,000-bph Union Iron wet and dry legs, which provides enough capacity to add a second dryer, if needed.

Rouse says one person can operate the entire elevator from one of three locations – adjacent to the receiving pits, the loadout shed, and the main office.

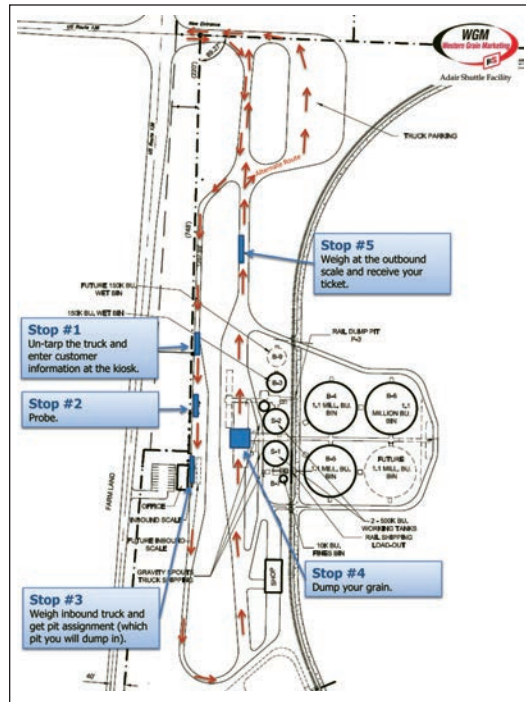


Diagram shows the layout of the Adair terminal and route of grain trucks through the property. Illustration courtesy of Western Grain Marketing LLC.