

Landward Side of the Levee

LDC SITES NEWEST RIVER TERMINAL WITH EYE TOWARD EXTENDING RAIL SERVICE



Louis Dreyfus Company
Wilton, CT • 203-761-2000

Founded: 1851
2015 net sales: \$55.7 billion
2015 volume: 81 million tons
Asset network: 300+ processing and logistics assets globally
Number of employees: 22,000
Platforms: Oilseeds, grains, rice, freight, finance, coffee, cotton, sugar, juice, dairy, fertilizers and inputs, metals

Key personnel at West Memphis:

- Shane Martin, plant superintendent
- Bill Shaw, assistant plant superintendent
- Kris Tillie, commercial manager
- Rick Shannon, junior merchandiser
- Lisa Rhodes, merchandising assistant
- Kelly Walker, office administrator

Supplier List

- Aeration fans**.....AIRLANCO, Chief Agri
- Bearing sensors**..... CMC Industrial Electronics
- Bin sweep**.....GSI Group LLC
- Bucket elevators**.....InterSystems
- Catwalks**Warrior Mfg. LLC
- Contractor/millwright**..... Younglove Construction L.L.C.
- Control system**.. CompuWeigh Corp.
- Conveyors**InterSystems
- Distributor**.....InterSystems
- Dust collection system** Imperial Systems
- Elevator buckets**Maxi-Lift Inc.
- Grain dryer** Zimmerman Grain Dryers
- Grain temperature system**Rolfes@Boone
- Leg belting**..Goodyear Conveyor Belting
- Level indicators**...BinMaster, Siemens
- Loadout spout**...Premier Fabrication
- Moisture meter** DICKEY-john Corp.



Louis Dreyfus Company's new 800,000-bushel river terminal at West Memphis, AR sends grain more than half a mile via covered belt conveyor (left) out to moored barges. Photo by Aerial Innovations of Tennessee, Nashville.

Barge-loading terminals usually are built as close to the river bank as feasible. Limiting the distance from the elevator to the loadout spout also can minimize costs and potential damage to grain.

Louis Dreyfus Company (LDC) took a different approach when building its new 800,000-bushel river terminal on the Mississippi River in West Memphis, AR (870-394-7454).

The slipform concrete and steel facility is actually a little over half a mile from the west bank of the Mississippi, on the west side of the river levee. The elevator is connected to the barge-loading station via an overhead 60,000-bph covered belt conveyor running 2,900 feet out to the water's edge.

- Motion sensors** CMC Industrial Electronics
- Steel storage** Chief Agri
- Surge tank** Warrior Mfg. LLC
- Tower support system** Warrior Mfg. LLC
- Truck scales**..... Rice Lake Weighing Systems



Plant Superintendent Shane Martin

This offers a number of advantages over building right next to the river. For one thing, having a levee between the elevator and the river helps prevent flooding the facility, when the Mississippi periodically overflows its banks.

But perhaps more importantly, says Plant Superintendent Shane Martin, is the location on the west side of the levee will allow LDC to bring in rail service, which is not possible



New 12,000-bph Zimmerman continuous-flow tower dryer, the largest that manufacturer makes, is serviced by 15,000-bph InterSystems wet and dry legs.

in West Memphis between the levee and the river. (The Burlington Northern Santa Fe Railway serves West Memphis.)

“That’s something our competitors aren’t able to do,” says Martin, who came to LDC in 2015 after being part of the management team at an ADM export terminal in Ama, LA.

“It’s a big change from when I worked at Ama,” Martin commented when *Grain Journal* visited in mid-August.

Flexible Design

The West Memphis facility, which was slated to begin receiving grain Sept. 1, is much smaller than Ama, of course, but it also has a different function as a delivery point for crops grown around the mid-Delta region.

Martin says the new terminal is similar in design to a river terminal LDC constructed four years ago at Rosedale, MS. “We’re a little bigger, a little faster, and have more options available,” he says.

“We’ll be able to handle anything

local growers can bring us. This year it will be strictly beans and corn. After that, we’ll be able to put through rice and wheat, then more after we get rail in.”

To emphasize versatility, he explains, the terminal features a four-pack of 77,000-bushel slipform concrete tanks, two of which will be aerated for grain awaiting loadout and the other two for wet grain awaiting drying in a 12,000-bph Zimmerman tower dryer. The elevator also includes a 500,000-bushel Chief corrugated steel tank for large-volume crops that don’t require many separations such as corn and soybeans.

LDC selected frequent partner Younglove Construction L.L.C., Sioux City, IA (712-277-3906), as contractor and millwright on the project. Younglove has been the lead contractor on a number of other LDC terminals on the Mississippi including Rosedale; Natchez, MS; and portions of an upgrade at Port Allen, LA.

Construction on the project began in early 2015 and was scheduled for completion Sept. 1, 2016.

Terminal Description

The four main slipform concrete tanks stand 32 feet in diameter and 140 feet tall. They are outfitted with 45-degree steel hopper bottoms eliminating the need for workers to enter the tanks to empty them. All are equipped with BinMaster capacitance probe level indicators.

The two dry-grain storage tanks are outfitted with three-cable Rolfes@Boone grain temperature monitoring systems. Each tank has a 50-hp AIR-LANCO centrifugal fan with silencer that provides 1/7 cfm per bushel of aeration with the assistance two 2-hp roof exhausters.

The two wet tanks have no temperature monitoring or aeration, since the grain they hold will proceed directly to the dryer.

The Chief tanks stands 90 feet in diameter, 88 feet tall at the eave, and 114 feet tall at the peak. The flat bottom tank has outside stiffeners, a 16-inch GSI Series II sweepauger, 18-cable Rolfes@Boone grain temperature monitoring system, and BinMaster capacitance probe level monitors. A set of four 40-hp Caldwell centrifugal fans provide 1/10 cfm per bushel of aera-



InterSystems 60,000-bph shipping leg deposits grain onto an overhead 60,000-bph covered belt conveyor out to the river.

tion through in-floor ducting.

Routing

LDC currently is originating most of the grain coming to West Memphis locally. Grain trucks are routed through the facility by a CompuWeigh Smart-Truck automated system using RFID scanners, digital display boards, and an automatic scale ticket printer next to the outbound truck scale.

Incoming trucks are sampled with one of two InterSystems truck probes then routed onto one of two 110-foot Rice Lake pitless inbound scales adjacent to the facility office building. Inside the building, samples are tested with a DICKEY-john moisture meter, Carter-Day dockage tester, and Charm Systems mycotoxin strips.

From there, the SmartTruck system automatically routes trucks to one of four 1,000-bushel enclosed mechanical receiving pits in a two-story 50-foot-x-100-foot slipform concrete structure. Two of the pits feed 20,000-bushel InterSystems receiving legs. The other two pits feed directly to the shipping leg.

The receiving legs are outfitted with two rows of 12x8 Maxi-Lift Tiger-Tuff orange buckets mounted on a 27-inch Goodyear belt. The legs are enclosed in a 10-foot-x-14-foot-x-120-foot Warrior support tower.

Empty trucks proceed to a 11-foot-x-

75-foot Rice Lake outbound scale where they are again automatically identified by the Smart Truck system for their tare weights and scale tickets.

The receiving legs deposit grain into a six-duct InterSystems rotary dual distributor, which sends grain to concrete storage via gravity spouts or to steel storage via an overhead 40,000-bph InterSystems enclosed belt conveyor.

The wet tanks deliver grain to the dryer via a 15,000-bph InterSystems wet leg equipped with 18x8 Maxi-Lift Tiger-Tuff orange buckets on a 20-inch Goodyear belt. The 12,000-bph continuous-flow tower dryer, the largest Zimmerman makes, in turn, sends grain back to storage via another InterSystems 15,000-bph leg.

Storage tanks empty onto above-ground 40,000-bph InterSystem enclosed belts, all of which send grain to a 60,000-bph InterSystems jump leg used for shipping. This leg is outfitted with two rows of 28x10 Maxi-Lift Tiger-Tuff orange buckets on a 60-inch belt.

This leg drops grain onto an overhead Continental Conveyor 60,000-bph covered (but not enclosed) belt conveyor running 2,900 feet, more than half a mile, out to the river. The conveyor is enclosed in a 10-foot Warrior box bridge, which includes a 250-foot clear span section over the top of the levee as required by the Army Corps of Engineers.

At the riverside, up to two barges can dock at dolphin-style moorings. The shipping belt deposits grain into a 4,000-bushel Warrior/Micada surge bin mounted over the water on an 18-foot-x-18-foot-x-80-foot Warrior stair tower. A separate Premier Fabrication tower supports a Premier 60,000-bph telescoping, steering, and lifting spout that delivers that grain to the barges.

“Everything went pretty smoothly,” Martin reports. “The high water we had on the Mississippi in December 2015 actually helped us by making it easier to set the bridges.”

Ed Zdrojewski, editor



Warrior stair tower over the water supports a Warrior/Micada surge bin and a Premier Fabrication loadout spout. A covered belt conveyor running more than half a mile in a Warrior box bridge brings grain from the elevator. Photo from Louis Dreyfus Company.