

The Future of Irrigated Agriculture

LINDSAY'S COMPLETE SOLUTION FROM PUMP TO PIVOT



SUMMARY

The 10,000-acre Dee River Ranch near Aliceville, Alabama, is an example of the future of farming on display today.

Owned by Annie Dee, her brother Mike Dee, and their 10 brothers and sisters, Dee River Ranch is located near the Mississippi-Alabama state line.

The business is made up of a successful cattle operation, along with a diversified crop portfolio including corn, soybeans, wheat and cotton.

Today, the ranch showcases the latest in Lindsay's integrated irrigation technology and products, including pivots, pumps and remote broadband telemetry. And, the system is already paying for itself through higher yields, lower labor costs and greater profitability per acre.

CHALLENGE

When the owner-operators of Dee River Ranch were looking for a solution to better manage their water and transition to irrigated production, they came to Lindsay Corporation and its diversified companies for its expertise, products and services.

The Dees had several goals in mind in integrating the project into their ranch:

- Conserve land and water resources.
- Make the farming operation more efficient and sustainable.
- Mitigate risk.
- Capture winter and spring rainfall in a reservoir and use the water for crop production.
- Make use of advanced irrigation technology to save time, labor and energy.
- Integrate and link all project components using cutting-edge remote telemetry.

ROI SUMMARY

- 79 bushels per acre – increased yield with irrigation
- \$553 additional revenue per acre – with Lindsay irrigation technology (at \$7 corn)
- Projected payback period of less than 4 years

SOLUTION

Dee River Ranch showcases cutting-edge irrigation technology as part of The Lindsay Advantage of durable, rugged irrigation systems, high-tech controls and plug-and-play add-ons.

The following Lindsay products and services were deployed at the ranch.

Continued >

"We are delighted with our results so far and know they will improve as we learn more and when to irrigate." – Annie Dee

DEE RIVER RANCH CASE STUDY

"This was one of the biggest integrated projects that we have been involved with. It has been very rewarding to see the various elements of The Lindsay Advantage come together to help the Dees meet their objectives."

— Rodney Mast, Owner, Black Prairie Tractor & Equipment
Local Zimmatic by Lindsay dealer, Columbus, MS

ZIMMATIC PIVOTS AND CONTROLS/ GROWSMART TECHNOLOGY

Dee River Ranch features five new Zimmatic center pivots, for a total of seven on the site, ranging in length from 988 to 2,023 feet (304 to 617 m). The pivots feature the thickest pipeline on the market and cover about 1,500 acres (607 ha) of corn, soybeans and cotton.

All seven machines are equipped with Zimmatic® BOSS control panels, Growsmart® GPS satellite positioning for precise pivot position and end-gun control, and chemigation and fertigation capabilities.

The programmable controls increase efficiency and improve yields by allowing the right amount of irrigation, at precisely the right time of the crop growth cycle.

FIELDNET

FieldNET® Wireless Irrigation Management provides the Dees with full control and monitoring of all pivots and real-time text message alerts to any of their cell phones. A user-friendly Web portal provides a quick view of every pivot, including location, status and water usage.

FieldNET Mobile provides automated control of the system from any smartphone.

FieldNET's pump control is used so the pivots can be grouped with pump stations for powerful information-sharing to reduce energy costs.

WATERTRONICS PUMP STATIONS

Water for the Dee River Ranch pivots comes from a 120-acre reservoir that was specially built for the project. The reservoir is fed by natural runoff and by water pumped from a nearby creek bed.

Watertronics® customized pump stations are used to transfer and pump the water. The pump stations were custom engineered and pre-tested based on the specific needs, field conditions and irrigation network design at Dee River Ranch.

The main pump station has the capacity to deliver water to 15 total pivots. The transfer pump station delivers water from a creek bed at the ranch up a grade of 50 feet and over a course of 3,000 feet to the reservoir.

The main pump station has the capacity to deliver water to 15 total pivots. The Dees designed their entire project with future growth in mind.

Watertronics variable frequency drive (VFD) control technology is used to reduce energy consumption and cost by automatically adjusting to water pressure and flow requirements of the system.

EZWIRELESS BROADBAND/IRZ

Remote networking and broadband Internet from ezWireless, a Lindsay company, is the project backbone that links all of the irrigation assets together—moving data across the entire project site and in an area with limited or no cell phone coverage.

Antennas, including the 80-foot (24.4m) tall base station tower, link all of the Dee River Ranch pumps, pivots and ancillary devices, including FieldNET Wireless Irrigation Management, and provide on-farm high-speed Internet capability over an area of 20 square miles. The ezWireless system includes infinite possibilities to add other high-speed plug-and-play data devices, such as video surveillance cameras, soil moisture probes and weather stations.

IRZ Consulting, a Lindsay company, played a critical role in designing and engineering the overall irrigation delivery system at Dee River Ranch. For example, IRZ's water resource management expertise allowed the Dees to know that the capacity of the 120-acre reservoir would meet their in-season irrigation requirements. IRZ also developed integrated solutions for power and water efficiencies and savings at the ranch.



FieldNET Wireless Irrigation Management.



The ezWireless network links all farm systems.



“There’s nothing on the market that I know of that can pump water as efficiently for us as the Watertronics pump stations.”

– Mike Dee

Annie Dee and Mike Dee.

FAST FACTS – DEE RIVER RANCH

- Located near Aliceville, Alabama
- Owned by Annie Dee, Mike Dee and their 10 brothers and sisters
- Great-grandfather farmed in Iowa; sixth generation children on the farm
- 10,000 acres (4047 ha), including corn, soybeans, wheat, cotton, hay and pasture
- Also raise cattle

RESULTS

The Dees are now documenting the savings, efficiencies and higher yields from this cutting-edge, integrated irrigation technology project.

Five farms on the ranch had corn on them in 2012. The average dryland corn yield was 103 bushels per acre while the average irrigated corn yield was 182 bushels per acre—a 79 bushel difference per acre across all five farms.

The Dees, first-time irrigators, installed two pivots initially last growing season to verify the value of irrigation. After seeing the results, they added five more pivots this year and now estimate the entire Lindsay project will pay for itself in less than four years.

“That is a great return on our investment,” Annie Dee says. “We are delighted with our results so far and know they will improve as we learn more and when to irrigate.”

Dee added that the ezWireless broadband cloud over the ranch has simplified their operation and saved labor by allowing them to access, view and control the pumps and pivots from their computers and mobile devices.

Mike Dee says the efficiency and completeness of the Watertronics pump stations is phenomenal, allowing the ranch to pump its irrigation water using electricity and at a fraction of the cost of diesel.

“The pump stations required a heavy upfront investment but I can see now

that they will pay for themselves in a couple of years and provide us with so many more options to expand in the future,” Mike Dee says. “There’s nothing on the market that I know of that can pump water as efficiently for us as the Watertronics pump stations.”

Initially, the Dees had a five-year build out plan for their irrigation technology system. But now, with the improved yields and pumping and other efficiencies, plus today’s higher commodity prices, they have moved that up to a two year plan.

Meaning, they have ordered eleven additional Zimmatic pivots to be installed and up and running before spring planting next year.



Watertronics customized pump station at Dee River Ranch.



A 120-acre reservoir supplies water to the pivots.

DEE RIVER RANCH INCLUDES THESE LINDSAY PRODUCTS:



ZIMMATIC PIVOTS/ CONTROLS AND LINDSAY TECHNOLOGY

- Five new Zimmatic® by Lindsay pivots, a total of seven center pivots
- BOSS control panels on all seven machines
- FieldNET® by Lindsay Wireless Irrigation Management used to control all pivots and pumps throughout the ezWireless broadband Internet network
- Growsmart® by Lindsay GPS satellite positioning for precise pivot position and end-gun control
- Approximately 1,500 acres (607 ha) under pivot irrigation
- Used to irrigate corn, soybeans and cotton



EZWIRELESS REMOTE NETWORKING AND BROADBAND INTERNET

- Wireless network is the project backbone that links all the irrigation assets together, moving data across the entire ranch
- Antennas link all of the Dee River Ranch project pumps, pivots, and ancillary devices, including FieldNET Wireless Irrigation Management
- Provides on-farm high-speed internet capability over a 20-square-mile (52-square km) area
- Supports office applications such as email, web, servers and wireless printing



FIELDNET WIRELESS IRRIGATION MANAGEMENT

- Full control and monitoring of all pivots
- Real-time text message alerts to any cell phone
- User-friendly web portal that provides a quick view of every pivot, including location, status and water usage
- FieldNET's pump control allows pivots to be grouped with pump stations for powerful information-sharing to reduce energy costs
- FieldNET's pump control dashboard shows pump pressure, flow, set point, total volume and pivot stats



WATERTRONICS® CUSTOMIZED PUMP STATIONS

Main Pump Station:

- 12,500 gallons- (47,318 liters) per-minute capacity
- Five, 150 HP vertical turbine motors
- Water distributed to the pivots through below-ground water pipes

Transfer Pump Station:

- 7,500 gallons-per-minute (28,390 liters) capacity
- Three, 100 HP vertical turbine motors
- Water is pumped up a grade of 50 feet (15.24 m) over a course of 3,000 feet (914 m)

To find out how The Lindsay Advantage can work for you, visit www.lindsayadvantage.com or talk to your local dealer.



THE LINDSAY ADVANTAGE

STRONG • LONG LASTING • DURABLE • RUGGED • EASY TO USE •
PLUG-AND-PLAY FAMILY OF ADD-ONS



SOURCE: Dee River Ranch and Lindsay Corp.

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