CASE STUDY
TUNNEL BORING | EPB TUNNELING

Project Name:
WHCRWA-6 Project

Prime/Sub Contractors:
AR Daniel Construction Services, Inc.
– Cedar Hill, TX

Location:
Katy, TX

Owner:
West Harris County Regional Water Authority

Ground Conditions:
Lean to fat clay with silty sand seams

Akkerman Equipment:
WM96SC-II EPB Tunnel Boring Machine.
1548 Haul Unit and TBM accessories

Pipe:
96-in OD steel ring beams and lagging

Total Length/Longest:
650 LF

PROJECT OVERVIEW

AR Daniel Construction Services completed earth pressure balance (EPB) tunnel boring operations for the WHCRWA-6 Project in Katy, Texas. The installation required construction of a 96-in diameter tunnel to support a major surface water conveyance system serving the region.

Operating in variable clay soils with sand seams, the crew utilized EPB tunneling methods to maintain face stability and control material flow. The installation contributes to a broader system designed to deliver surface water to regional treatment facilities and support long-term water supply needs.

THE CHALLENGES

- Variable ground conditions including clay and silty sand seams
- Maintaining face pressure and stability in mixed soil environments
- Installing large-diameter tunnel segments with ring beam and lagging systems
- Ensuring alignment accuracy over a continuous tunnel drive

THE SOLUTION

- Utilized the Akkerman WM96SC-II EPB TBM to balance earth and groundwater pressures at the tunnel face
- Maintained controlled excavation and material conditioning to manage mixed soils
- Installed steel ring beams and lagging to support the tunnel structure during advancement
- Leveraged haul unit systems to ensure efficient spoil removal and continuous production

OUTCOME

- Successfully completed the 650 LF EPB tunnel installation
- Maintained stable face conditions and controlled excavation through variable soils
- Achieved accurate alignment across the full tunnel drive
- Supported expansion of regional surface water transmission infrastructure
- Demonstrated effective EPB tunneling performance in Gulf Coast ground conditions



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