CASE STUDY
MICROTUNNELING | SLURRY MICROTUNNELING

Project Name:
Aurora Raw Water Intake Project

Prime/Sub Contractors:
Engineering & Construction Innovations, Inc. – Oakdale, MN

Location:
Aurora, MN

Owner:
City of Aurora

Ground Conditions:
Variable soils with high groundwater pressure (20+ ft head)

Akkerman Equipment:
SL44C Slurry Microtunneling System with sealed pipe adapter and retrieval bulkhead

Pipe:
44-in steel casing

Total Length/Longest:
120 LF

PROJECT OVERVIEW

Engineering & Construction Innovations, Inc. (ECI) completed slurry microtunneling operations for the Aurora Raw Water Intake Project in Aurora, Minnesota. The project required installation of a new intake line beneath a lake to replace an aging water source and support regional water supply infrastructure.

Working from a deep caisson launch shaft, the crew advanced the microtunnel under submerged conditions while maintaining control in variable soils and elevated groundwater pressures. The installation enabled development of a reliable raw water intake serving multiple surrounding communities.

THE CHALLENGES

- High groundwater pressures exceeding 20 feet of head
- Subaqueous tunneling beneath a lake environment
- Maintaining face stability and alignment in variable soil conditions
- Constructing and operating from a deep launch shaft with sealing requirements

THE SOLUTION

- Utilized the Akkerman SL44C slurry microtunneling system to maintain face pressure and control groundwater inflow
- Implemented sealed pipe adapter and retrieval bulkhead systems to support pressurized, underwater operation
- Applied slurry pressure balance methods to stabilize the tunnel face in changing soil conditions
- Maintained precise line and grade control throughout the installation

OUTCOME

- Successfully completed the 120 LF microtunnel beneath the lake
- Maintained face stability and alignment under high groundwater pressure conditions
- Enabled development of a new raw water intake system
- Supported reliable water supply infrastructure for Aurora and surrounding communities
- Demonstrated effective execution of slurry microtunneling in pressurized, subaqueous environments



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