

# Smalley-Piper Groundwater Remediation Collierville, Tennessee



FISHER ARNOLD

## PROJECT EXPERIENCE

Fisher Arnold provided architectural and engineering support, site construction plans specifications, land surveying, and local permitting assistance for the completion of a treatment building for a groundwater remedial project intended to restore contaminated groundwater for reuse as a potential drinking water source for the City of Collierville Tennessee.

Later, we were tasked to support the engineering design team with a 24-hour operations and maintenance (O&M) project for the building and treatment process. The overall treatment approach consists of groundwater recovery wells feeding contaminated groundwater to the treatment process with an average design flow rate of 100 gpm. Process steps include pH adjustment, chemical reduction, precipitation treatment and ion exchange. The system includes equipment for flow equalization, wastewater conveyance, precipitation, coagulation, flocculation, clarification, treated effluent storage, and reinjection into the shallow aquifer. All O&M work is being completed in accordance with the project O&M manual.

In addition to monitoring treated water output, other work tasks include operations and maintenance for the following system components:

- Influent, process, and chemical metering system pumps
- Continuous backwash filters and bag filters
- Plate Settler
- Automated Filter Press
- Exterior hazardous waste containers (transfer of filter press sludge cake)
- Mix Tanks
- Holding Tanks
- Hach Kit with table top measurements (daily influent/effluent contaminant monitoring)
- Weekly analytical sampling
- Flow meters
- System PLC interface
- System trouble shooting and repair

Since we began environmental remediation activities at the facility, influent plume concentration for contaminants of concern in groundwater has been reduced by 54 percent. Treated groundwater flow has increased from an average of 20,000 gpd to approximately 80,000 gpd. Treatment efficiency of the effluent water reinjected to the shallow aquifer is greater than 99.9 percent.

