



Construction of the replacement interceptor trench.

Weyerhaeuser DeQueen Treating Facility, DeQueen, Arkansas

Perimeter Hydraulic Barrier and Site Remediation Support - Mueser Rutledge Consulting Engineers (MRCE) performed a field subsurface investigation and laboratory testing for proposed new slurry trench construction and deepening of an existing slurry trench construction. Field work was performed under Level D and modified Level C conditions. MRCE evaluated the character of the bottom closure stratum, the depth of the closure key, and the quality of the slurry trench backfill. An investigation and design was also performed for a proposed new trench alignment to connect existing up-gradient and down-gradient trenches. A preliminary design was prepared for the slurry trench and supporting work. A water balance analysis and cost:benefit analysis of construction and pump and treat alternatives was performed to evaluate the economics of the proposed barrier. As a result of the MRCE efforts, the owner decided against installation of additional hydraulic barriers, to continue pumping and treating collected groundwater, and to improve site grading to promote storm water runoff. MRCE provided geotechnical support for remediation designs to other members of the design team, including:

- Recommendations for rehabilitation of damaged drainage trenches and methods for optimizing the remainder of the existing ground water collection system.
- Recommendations for installation of piezometers for monitoring effectiveness of the perimeter containment and interior pumping
- Erosion control and stabilization of a creek channel where it impinged on the down-gradient slurry trench
- Permeability testing of S-B samples taken by others to evaluate the existing slurry trench barriers. Review and correction of laboratory permeability testing performed by others, which incorrectly identified the S-B backfill to be out of compliance.

Interceptor Trench and Slurry Trench Barrier Investigation - MRCE provided expert witness services for Weyerhaeuser regarding problems which occurred with the construction of a bio-polymer interceptor trench and a soil bentonite slurry trench at Weyerhaeuser's DeQueen, Arkansas wood treating facility. Weyerhaeuser reconstructed an 800 lin. ft. interceptor trench using sheeting and bracing. MRCE provided full time observation of the excavation to define and evaluate the original bio-polymer construction. MRCE is providing expert testimony regarding the conditions encountered and the construction technique. MRCE investigated the slurry trench barriers using borings, and performed 35 permeability tests on soil-bentonite backfill recovered in that investigation.