State: Maryland

Borrower Name: Town of Vienna

Engineering Firm: Davis, Bowen & Friedel, Salisbury, MD

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Congressional Information: Representative Wayne Gilchrest

Counties: Dorchester

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Plastic Sheet Piling Minimizes Contaminated Dewatering Flow

Description of Problem/Issue:

A new wastewater treatment plant was to be construction on land which contained contaminated groundwater. The contamination was from past use by a power company, and possibly from leaking underground storage facilities on adjacent properties. The groundwater contamination would be an issue during construction because dewatering would be required during excavation for the biolac treatment basin. The land is very flat, and lies low along a tributary to the Chesapeake Bay. With the time needed for excavation and placement of the concrete basin, it was estimated that there could be several million gallons of groundwater to be pumped. Issues that complicated the problem included:

1. The Power Company had agreed to treat the dewatering flow.
2. They had limited capacity for temporary treatment.
3. The Power Company had a large storage tank on adjacent property, but there was still a concern that over the long run, there would not be adequate temporary treatment capacity.
4. A gas station exists on an adjacent property, and it was believed that it contained leaking underground storage tanks. The potential existed to draw contamination from that site during dewatering.
5. The potential existed for significant extra costs and long time delays arising out of legal problems and technical issues.

Based on initial tests by the State, it had been thought that the soil could be excavated and aerated enough to solve the problem. During excavation, though, it was discovered that the soil was more contaminated than previously thought, and damp weather also was reducing any natural aeration cleansing. It was known that a clay soil layer existed approximately 20 feet below the surface. So the idea of sheet piling was proposed to enclose and essentially seal the excavation site. This would greatly reduce any dewatering volume. The Contractor priced two sheet pile systems, one of

steel and one of plastic. Plastic was selected as the less expensive and installation was completed in 10 days after equipment and supplies arrived. Very minimal volume of water was pumped once the groundwater level was pumped down. The basin has been installed and the job is progressing well. Sheet piling was installed 25' deep and along a perimeter of 380' for a cost of $120,000. The piling will be left in place.

Funding sources for the project are RUS, Maryland Department of the Environment, and Community Development Block Grant.