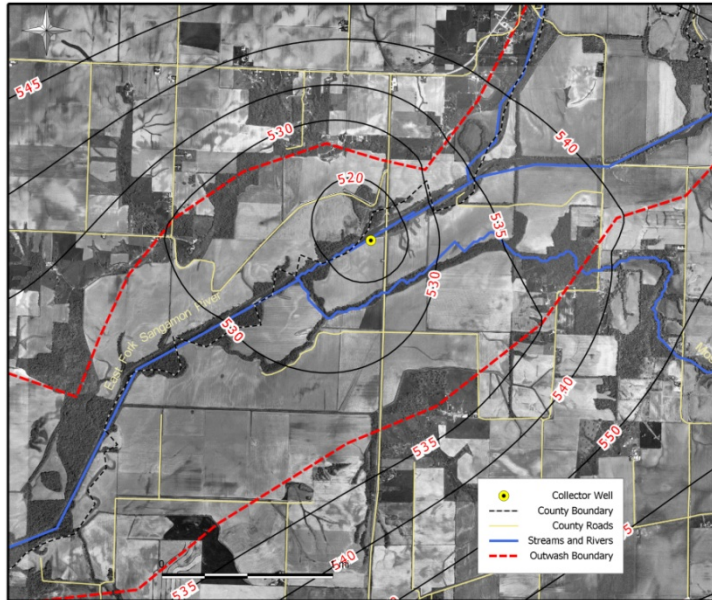


Evaluating Water Supply Alternatives

Christian County, Illinois



Groundwater elevations with a collector well pumping from the outwash aquifer.

Key Project Areas

Power Utility

Water Quality

Drought Planning

Demand Analysis

Water Supply Planning

In 2006, Layne assessed water supply alternatives for Cardinal Gasification Company's synthetic natural gas plant. The facility required a reliable, year-round source of raw water for processing and cooling. Layne's primary objective was to determine the reliable quantity and quality of water that could be extracted from the Sangamon River Basin and recommend the best alternative for the extraction, storage, and delivery of water. We evaluated three viable supply source alternatives: surface water intakes along the Sangamon River, a set of riverbank filtration collector wells along the river, and wastewater effluent from the city of Decatur.

We developed preliminary cost estimates for the three alternatives along with conveyance and storage costs. The preliminary evaluation was based on an assessment of the overall basin water budget. We also assessed the risk of drought and differences in water quantity and water quality from each source. Demand scenarios were used to evaluate the feasibility and costs for each source alternative.