



Collector Well Yields Under Varying Seasonal Conditions

**PROJECT PROFILE**  
**WATER MANAGEMENT**

**CLIENT**  
City of Bismarck, ND

## **COLLECTOR WELL YIELD ANALYSIS AND DESIGN**

**Bismarck, ND**

### **SITUATION:**

Bismarck, North Dakota, was installing new collector wells along the Missouri River but wanted to understand the range in yields under different seasonal conditions. In addition, once construction began, a previously unknown layer of boulders required that the design and yield estimates be revised.

### **SOLUTION:**

Layne completed a detailed evaluation of the predicted well yields under varying seasonal conditions and considered critical well-design parameters, such as river stage and streambed resistance, that could affect the long-term performance of the collector well. We used our patented collector well three-dimensional modeling tools to predict long-term yields and seasonal variations. This collector well system produced approximately 25 million gallons per day.

### **SERVICES EMPLOYED:**

- + Hydrogeological Investigation
- + Groundwater Flow Modeling
- + Collector Well and Angle Well Design
- + Ranney® Collector Wells

