

# Case Study



The information in this case study is reprinted from the American Cyanamid AM-9 technical manual. AM-9 was American Cyanamid's acrylamide grout product. Avanti's AV-100 Chemical Grout matches the chemical formulation, usage and performance of AM-9.

## **Title:** Repairs to Leaking Earthen Dam

**Owner:** Sterling Forest Water Corp., Industrial Park  
**Engineers & Grouting Specialists:** Terra-Chem, Inc.  
**Soil Engineers:** Woodward-Cycle-Sherard Associates

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### **PROBLEM:**

Indian Kill Reservoir is a man-made lake (capacity 200 million gallons.) serving a portion of Sterling Forest, a community developed for scientific research, education, and suburban living. This lake was formed during 1958-59 by constructing an earthen dam on top of an old road bed, crest elevation 713 feet. During the early years of service, the new embankment impounded water to an elevation of 702 feet without any noticeable seepage.

In 1963, the water level was raised to design elevation of 709 feet. Immediately, heavy seepage was noted along the downstream toe of the dam extending for a distance of approximately 500 feet.

### **SOLUTION:**

A cooperative study of methods for correcting this problem and a soils investigation by Terra-Chem, Inc. and Woodward-Cycle-Sherard Associates, resulted in a decision to use chemical grouting methods for stabilization to provide an impermeable barrier. Injection pipes were drilled on approximately four foot centers, and application made on the upstream edge of the embankment of the dam.

### **RESULTS:**

AM-9 was used to seal off the porous fine sand areas and as an agent to control the penetration of other chemical and filler materials, such as cement and bentonite. This principle of selecting the most suitable materials for any specific location, and the versatility of AM-9, resulted in this job being completed for approximately one-third the cost of the conventional methods reviewed.