



GEMI[®]

Collecting the Drops:

**A Water
Sustainability
Planner**

Case Example

The Dow Chemical Company: Improving the Quality of Ultrapure Water in a Dresden Microprocessor Plant

Process water quality improvement can have an enormous effect, even—or perhaps especially—in the manufacture of the tiniest devices. The Dow Chemical Company developed a system to reduce boron to undetectable levels in the ultrapure water used in an advanced facility that produces approximately 5000 AMD Athlon microprocessors per week.

The Fab 30 plant in Dresden, Germany is the main microprocessor facility of Advanced Micro Devices, Inc. (AMD), which manufactures products for the computer, communications, and consumer electronics industries. The largest microprocessor plant in Europe, the Fab 30 site adheres to stringent quality demands on process water in its operations—particularly concerning boron levels. Boron is difficult to remove with conventional water-treatment systems, and boron compounds can have negative effects on the water-treatment system itself.

A specially designed system using counter-current UPCORE™ technology enabled Fab 30 to meet its ultrapure water (UPW) specifications. Boron is reduced to below the detection limit (in 2003, less than 20 parts per trillion) at an early make-up stage of the water treatment plant. After five years of continuous operation, AMD Fab 30 has not observed any detectable boron in the outlet of the ion exchange demineralization unit.

