

In Contamination

# Grace witness's testimony implicates Beatrice

By DAN KENNEDY

## TOXIC TRIAL

BOSTON — For the first time since the Woburn leukemia trial opened three months ago, one of the two defendants has introduced evidence that implicates the other in the chemical contamination of municipal wells G and H.

Dr. John H. Guswa is a hydrogeologist hired by W.R. Grace & Co. to study whether chemicals dumped at Grace's East Woburn Cryovac plant could have polluted the wells, as the plaintiffs allege.

Guswa has concluded that any chemicals dumped at the 369 Washington St. facility could not have reached wells G and H during the years the wells were in use, 1964-1979. The Cryovac plant is about 2,400 feet northeast of the wells.

But in a surprising development, Guswa testified in U.S. District Court Tuesday that groundwater on the west side of the Aberjona River flows toward the wells, on the east bank of the river, when the wells are pumping.

The other defendant in the case, Beatrice Foods Co., is the former owner of a 15-acre property about 700 feet southwest of the wells. The property is part of the Riley Leather Co. tannery, 228 Salem St., which Beatrice owned from 1978 to 1983.

Guswa's testimony was based on a pumping test the U.S. Environmental Protection Agency (EPA) conducted of wells G and H in December 1985. Guswa said the results of the test showed both wells created a cone of depression that affected groundwater levels on the westerly side of the river.

A map prepared under Guswa's direction included arrows depicting groundwater flow pointing from the westerly side of the river toward wells G and H.

chemical contaminants at the Cryovac site and on the Beatrice property flowed through groundwater to wells G and H.

Using the contaminated water resulted in six deaths and two illnesses, the plaintiffs claim. Grace and Beatrice counter that they did not contaminate the wells, and that even if they did, the chemicals cited by the plaintiffs do not cause leukemia.

Most of Tuesday's court session was devoted to a painstaking, highly technical explanation by Guswa of the aspects of his investigation. Highlights included:

- Measurements by the U.S. Geological Survey showed the Aberjona River lost up to 650 gallons of water per minute between Olympia Avenue, north of the wells, and Salem Street, south of the wells, during the December pump test. Guswa said.

That means, Guswa added, that after two to four months of continuous pumping, river water would start reaching the wells — and that river water would soon constitute 50 percent of the water in the wells.

Judge Walter Jay Skinner noted that, unlike the pumping test, well G was used alone during most of the 15-year period that the wells were in use.

Guswa replied that fact would not change his 50-percent figure.

and would not change his two-to-four-month estimate by more than a few weeks.

Grace contends that a considerable amount of contamination in wells G and H came from the river, which has a history of industrial pollution dating back to the early 1900s.

Dr. George Pinder, a Princeton University hydrogeologist hired by the plaintiffs, has testified that the wells drew little or no water from the river.

Part of Pinder's opinion was based on his belief that the river bottom is covered with a layer of impermeable peat. But Guswa said peat samples show that layer is "probably more permeable than the silty sand that lies beneath the river."

Pinder also estimated that it would take at least 10 years of continuous pumping before any river water would enter the wells. Guswa said, for that to be true, the permeability of the peat would have to be "comparable to concrete."

- Using precipitation averages, Guswa estimated that groundwater flows off the Cryovac site at the rate of five gallons per minute.

Since wells G and H, at their maximum capacity, pump at the rate of 1,100 gallons per minute, that means the amount of Cryovac groundwater in the well water would be no more than 0.5 percent, he said.

- Guswa conceded that wells G and H are downgradient from the Cryovac site, and that chem-

icals at Cryovac would eventually enter the wells. But he repeated the assertion he made Monday that, even if chemical dumping had begun the day the Cryovac plant opened in 1960, no chemicals would have reached the wells by the time they closed in 1979.

To get to the wells, he said, the chemicals would have to flow through impermeable glacial deposits and bedrock.

In addition, he said chemicals actually move through the ground more slowly than the groundwater that is carrying them because of dispersion, retardation (the tendency of some chemicals to cling to soil particles) and decay, such as biodegradation or volatilization (akin to evaporation).

Earlier in the trial, Ellis Koch, a hydrogeologist hired by Beatrice, offered testimony that was directly contradicted by Guswa's model. Koch said the pumping of the wells created a groundwater ridge, directly under the river, that formed the western boundary of the cone of depression.

Groundwater west of the river flowed from east to west, away from the wells, when the wells were pumping, Koch testified, because of the groundwater gradient established by the ridge of water.

Koch's testimony would absolve several properties west of the river from responsibility for contaminating wells G and H.

Those properties, which are not named in the lawsuit, include the former Hemingway Transportation site, north of the Beatrice site, and Aberjona Auto Parts and Whitney Barrel Co., south of the Beatrice site.

But Grace attorney Michael B. Keating told the Daily Times Chronicle that Guswa will testify today that chemical contaminants at Hemingway and at Aberjona or Whitney contributed to the pollution of the wells.

Keating is expected to conclude his examination of Guswa this morning. Beatrice attorney Jerome P. Facher will have an opportunity to question Guswa before plaintiffs' attorney Jan R. Schlichtmann begins his cross examination.

The trial involves a claim by eight East Woburn families that