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Citizens Advisory Committee members skeptical

EPA says benzene may have caused Woburn leukemias

By DAN KENNEDY

WOBURN — Drinking-water contaminants other than trichloroethylene may be responsible for the city's childhood leukemia problem, a U.S. Environmental Protection Agency scientist said Monday night.

Dr. William H. Farland told the Citizens Advisory Committee (CAC) that two known human carcinogens, benzene and vinyl chloride, may have been present in drinking water in the past.

High concentrations of both chemicals were found in monitoring wells in East Woburn in 1984, he noted. Work should be done to determine whether either substance may have been present in municipal wells G and H when they were in operation, between 1964 and 1979, he said.

But several CAC members said the EPA appeared to be trying to divert attention from trichloroethylene (TCE).

"I do think it is very untimely and very unfortunate to communicate the message ... that we can forget about TCE," said

the Rev. William Flug, who accused the EPA of becoming the "Chemical Protection Agency."

Farland assured the CAC that was not his agency's intent. Instead, he said it made sense to consider benzene and vinyl chloride in addition to TCE, since all three chemicals are present in East Woburn and since benzene and vinyl chloride are considered more carcinogenic than TCE.

"Would you advise (researchers) that TCE is not a human leukemogen, so look for something else?" Rev. Flug asked.

"No, absolutely not," Farland

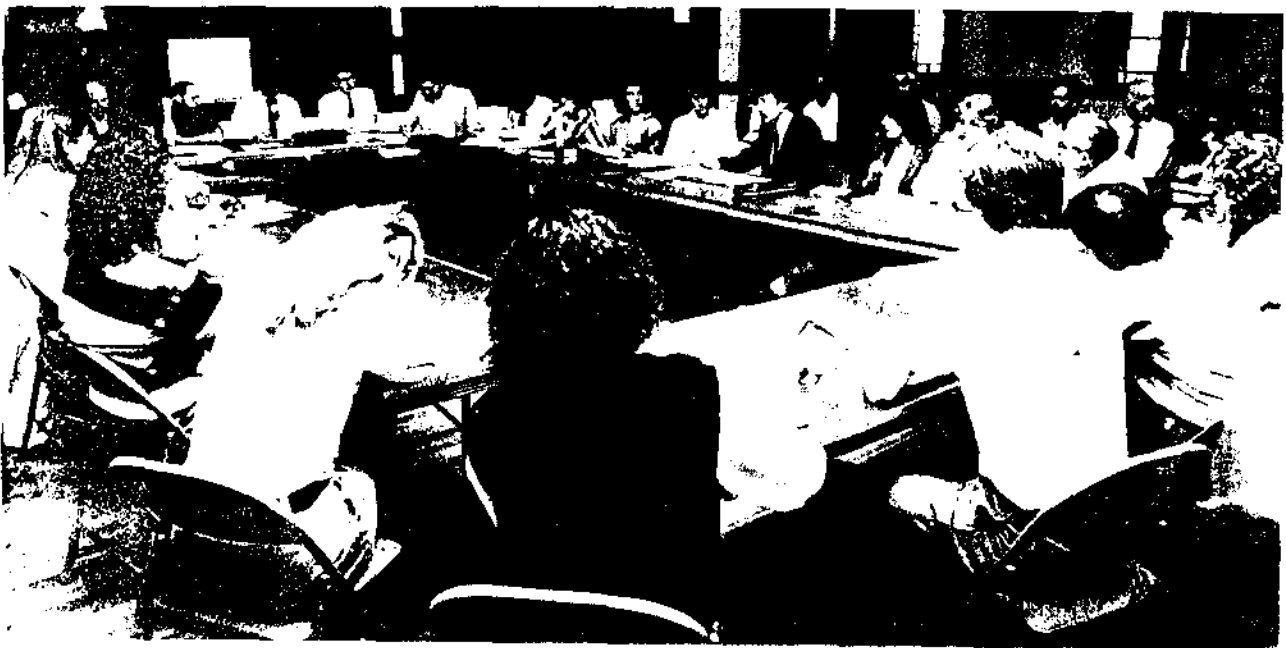
replied. "And I would hope no one here would come away with that impression."

Farland, who is acting director of the EPA's Office of Health and Environmental Assessment, in Washington, was on hand to discuss an 18-page report released last week by a group of 12 to 15 EPA scientists.

Nearly 30 citizens and federal, state and local officials attended the two-hour meeting.

The EPA scientists, who Farland said met about a dozen times over a four-year period,

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CITIZENS ADVISORY COMMITTEE members listen to Dr. William Farland, a scientist with the U.S. En-

vironmental Protection Agency, explain a report on Woburn's leukemia problem. (Steven Senné photo)

concluded that Woburn does have an unusually high childhood leukemia rate.

Link to wells called 'tenuous'

But the report describes as "tenuous" the link between the leukemia cases and wells G and H, as found in a study by the Harvard School of Public Health. The report also calls for further research.

Farland cautioned that the report is not meant to be definitive, and that it was originally intended to be circulated only within the agency. He disputed charges that the work was carried out secretly, saying the scientists were engaged in an internal effort that was not aimed at interfering with any other studies.

Farland was not a member of the group. As a result, he did not know the answers to a number of questions raised by CAC members. He said he would try to research their questions and get back to them.

Wells G and H were shut down when TCE and other organic industrial solvents were discovered in the water. The Harvard study showed that families were more likely to suffer from leukemia if they received most of their water from those wells.

But Farland said there is no scientifically proven link between TCE and leukemia, noting that the EPA considers the chemical to be a suspected human carcinogen based on animal studies.

According to a risk assessment developed recently by the EPA, the chemicals found in wells G and H — TCE, tetrachloroethylene and chloroform — would cause a maximum of seven cancers in a million adults if water were ingested over 15 years.

Under questioning by Rev. Flug and the Rev. Bruce Young, Farland said a child would be considered to be at greater risk by a factor of 3½.

He added that, if one were to consider skin absorption and inhalation in addition to ingestion, the risk would approximately double.

And, if one were to assume that a person received 100 percent of his water from wells G

and H, rather than the 30 percent figure used by the EPA, the risk would increase again by a factor of 3½.

Using those figures, the water from wells G and H could cause a maximum of about 160 cancers in a million children if ingested, absorbed and inhaled over 15 years.

Chemicals found near wells

But Farland said benzene, a known leukemia- and cancer-causing agent, and vinyl chloride, a known cancer-causing agent, were found in monitoring wells near wells G and H in far higher concentrations.

Using the same assumptions that produced an estimate of seven cancers per million adults for wells G and H, Farland said a monitoring well on the Weyerhaeuser property, 1,800 feet from wells G and H, revealed a benzene concentration that could produce a maximum of 90 cancers per million adults.

Vinyl chloride found in a well on the Wildwood property, 600 feet west of the wells, could also produce 90 cancers per million. And vinyl chloride found in groundwater at the W.R. Grace property, 2,000 feet northeast of the wells, could have produced as many as 1,000 cancers per million if ingested over 15 years.

The scientific group recommended further study to determine whether benzene or vinyl chloride may have been present in wells G and H in the past.

CAC members suggested that groundwater modeling conducted for the 1986 federal trial brought by eight Woburn families against three East Woburn firms be consulted.

But two models developed by opposing parties — Dr. George Pinder for the families and Dr. John Guswa for W.R. Grace — showed it was unlikely that a chemical could have been present in wells G and H in the past but not today.

That is because the wells, when pumping, drew from a wide area. Therefore, the wells were likely to become more, rather than less, contaminated during the 15 years they were in use.

An exception to that would be if the wells drew pollutants from the Aberjona River, a possibility

cited by Farland.

Pinder testified during the trial that the wells drew virtually no water from the river, even though both wells are located on the east bank.

But Guswa said as much as half the well water came directly from the river — and a study by the U.S. Geological Survey, incorporated into the EPA's feasibility study on cleaning up the underground aquifer, supported Guswa's theory.

Rev. Young said he found it "troublesome" that the EPA scientists' report would become part of the official data on Woburn despite its incomplete nature.

"People are actually going to believe that this research stands without question, and I don't think it does," he said.

Farland replied that the scientists who worked on the report will continue to deal with the issues as part of their professional lives. He added that he hoped the CAC would find the recommendations for further research helpful.

Benzene a 'red herring'?

Rev. Young called benzene a "red herring." He said researchers would have to make a "wild assumption" to look at something never found in wells G and H, rather than at the plumes of TCE contamination that can be traced directly from the wells to several industries in the area.

Rev. Flug was particularly



DR. WILLIAM FARLAND
... EPA scientist

critical of the EPA scientists for failing to consider work by Dr. David Ozonoff, a professor at the Boston University School of Public Health, who was hired by the families in preparation for the 1986 trial.

Ozonoff reported finding "solvent poisoning" in the surviving family members, most of whom were suffering from cardiac, neurological and immunological problems.

Those immune-system disorders, Rev. Flug said, could have led to leukemia, especially in fetuses and infants.

The minister said he found it



REV. BRUCE YOUNG
... questions findings

"absolutely reprehensible" that the EPA would issue a report without interviewing Ozonoff and without giving Dr. Stephen Lagakos, principal author of the Harvard study, and Richard Clapp, director of the Massachusetts Cancer Registry, a chance to review the findings.

In one particularly embarrassing moment, Clapp, who attended the meeting, replied "no" when asked by Rev. Flug whether he agreed with a quote attributed to him in the report.

The quote is: "Cluster analyses of the leukemia cases done by Dr. ... Richard Clapp,



Steven Senne photos

REV. WILLIAM FLUG
... criticizes report

Massachusetts Department of Health, found little evidence that a cancer 'cluster' existed in Woburn."

Farland replied it made little sense to focus on the word "cluster," since that term has a very technical and specific meaning among epidemiologists concerning time, geography and causes.

In fact, Farland said, the EPA scientists agree that Woburn has a leukemia problem, and that the likely cause of that problem is environmental contamination.