

Texaco and its Consultants

An issue relevant to scientific integrity has arisen in connection with a court case in the Amazon, wherein the Amazonian people are seeking redress for environmental damage and deleterious health effects related to the operations of Texaco in the Amazon region of Ecuador. It has been estimated that in its more than 20 years of oil exploitation in Ecuador (1971–1992), Texaco discharged into the environment 16.8 million gallons of crude oil and 20 billion gallons of toxic wastes.¹ The environmental damage caused by Texaco can be compared to 10.8 million gallons of crude oil spilled in Alaska in the Exxon Valdez tanker disaster in 1989. Moreover, six hundred open pits filled with toxic waste were apparently left in the surrounding communities in Ecuador.^{2,3} In 1995, the company signed an agreement with Ecuador's government to undertake cleanup activities in return for releasing the company from future responsibility related to its former oil operations.⁴

On February 10, 2005, during the ongoing court proceedings, major newspapers in Ecuador ran a full-page (presumably paid) advertisement citing reports by scientists retained by Texaco who critiqued studies published in prestigious peer-reviewed journals that suggest links between adverse health effects and oil development in the Amazon.^{5–10} Texaco's consultant scientists, Kenneth Rothman, Felix Arellano, Alvaro Felipe Dávalos Pérez, Lowell Sever, David J. Hewitt, and Laura Green, pointed to alleged weaknesses in the published studies. The ad was, to us, a blatant effort by the company to sway public opinion as the legal case was being heard. The Web site is available at: <http://www.texaco.com/sitelets/ecuador/en/legal_

[archives/press/2005-02-02_health_news.asp](http://www.texaco.com/sitelets/ecuador/en/legal_archives/press/2005-02-02_health_news.asp)>.

Epidemiologic studies, however meticulously conducted, may have inherent limitations, as all epidemiologists are aware. Epidemiology is not laboratory science but a study of the real world, and thus always subject to challenge in its ability to control for all potential effects. Especially in vulnerable study populations, exact details of the populations at risk, as well as the extents, natures, and durations of exposures, are difficult to document, and ascertainment of outcomes is limited by the quality of health services available.

However, epidemiologic findings can confidently detect trends, and it is the body of evidence that should influence policy. The scientific process of peer review ascertains whether the potential weaknesses of any study raise doubts sufficient to preclude publication of its findings and conclusions. Texaco's consultants went to great pains to find flaws in the studies. Some of the so-called weaknesses they point out are not even themselves of particular concern, e.g., while "memory bias of respondents" may be a confounder in some circumstances, it is hardly a factor in the case of remembering pregnancy and spontaneous abortion. Self-reported health effects—of which they also seem to question the validity—is a widely used and accepted practice.

The onus cannot be put on scientists to ensure that data are available to evaluate adverse health impacts. It is far more logical to require a company extracting minerals or biological raw materials to accept responsibility, as good corporate citizens, for determining what protective measures it would be prudent to impose, and to monitor its success in controlling poten-

tial adverse human health and environmental effects. If this did not occur, should we not be asking "why not"? In many jurisdictions, environmental health impact assessments are now required—putting the onus where it belongs: on those who are responsible for the potential health impacts. In fact, environmental health impact assessments are increasingly addressing not only direct (toxicologic), but also indirect impacts of development projects (health effects mediated by changes in ecologic and social systems).^{11,12} Texaco's Web site maintains that the primary causes of disease in the region are poverty, poor sanitation, naturally occurring bacteria and parasites, a lack of access to clean water, and insufficient infrastructure, adding that, "it is both irresponsible and inaccurate for the plaintiffs to ignore these well-documented conditions." Yet nowhere does Texaco mention how oil development has conceivably altered these conditions, nor does it state that such conditions increase vulnerability to the environmental exposures of concern. Responsible environmental health scientists, cognizant of the need to assess indirect as well as direct health effects of operations such as these, would have raised these issues in an open and comprehensive discussion.

Texaco's protagonists, whether or not they agree about the adverse health impacts of the social and ecologic disruptions related to the oil company's operations, can hardly believe that the agents involved in drilling, and in the extracted oil, are innocuous. The hired experts never referred to industrial and environmental exposure records, so presumably either the company failed to collect and maintain these data or the containment of the toxic agents was ineffective, and therefore not mentioned. The consultants commissioned by Texaco might have reasonably been expected to note that in the light of the monitoring, control, and mitigating measures provided to them by the company

there would have been no reason for the populations to have experienced any disease excesses. Their failure to allude to the control measures instituted by Texaco certainly raises questions.

Scientists welcome illumination of scientific limitations, particularly for the purposes of promoting better studies. However, the place to air legitimate scientific concerns about the quality of published research is in the research literature itself, wherein the critiques themselves would be subject to peer review. The original authors then have the opportunity to respond to the critiques in an environment of open scientific dialogue and scrutiny by scientists internationally. When this is not done, as has happened in this case, the public may be seriously misled. We encourage our colleagues to submit their critiques of published studies to the scientific literature, not to industries that may be assumed to have vested interests in gainsaying inconvenient scientific evidence, such as Texaco's apparent interest in protecting itself by undermining the Amazonian people's quest for environmental justice.

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ANNOUNCEMENT

European Asbestos Conference in Belgium

The use of asbestos was banned in all 25 Member States of the European Union as of January 1, 2005. Unfortunately, the repercussions of a hundred years of widespread asbestos use remain in contaminated national infrastructures, the environment, and the lungs of European men and women. It has been estimated that in the current 35-year period, a quarter of a million men could die in Western Europe from mesothelioma, a type of cancer caused by exposure to asbestos. These deaths are occurring in countries many of which had regulations to minimize hazardous occupational exposures. How much worse will the death toll be in those countries, such as many of the new Member States, where such regulations did not exist or were poorly enforced?

A European Asbestos Conference, which is being organized by the GUE, a consortium of European left-wing political parties, and the International Ban Asbestos Secretariat (IBAS) will take place September 22 and 23, 2005, in the European Parliament in Brussels. The objectives of this event include: increasing politicians' (especially MEPs from the new Member States) awareness of asbestos-related problems, exploring options for pressing European multinationals to: adopt corporate codes against using asbestos in their worldwide operations and establish codes of practice for dealing with asbestos products in their infrastructures, and examining strategies and planning future initiatives.

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