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COMPANY CONFIDENTIAL

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November 22, 1985

WGK/Northwestern
Health Study

cc

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Attached is the second draft Q&A on the Northwestern Health Study. If you have additional thoughts, please return comments on your copy.

Sarah

Sarah G. Collins

jd

Att.

*Copy my comments on page 4
& send to S. Collins & addressees
& c.c's. The rest seems O.K. to
me.*

J. Spraul
11-25-85

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QUESTIONS & ANSWERS -- NORTHWESTERN/WGK HEALTH STUDY

Q1. What is the purpose of this health study?

A1. Though various health studies have been conducted in the scientific community as well as by industry, questions remain on possible or suspected health effects of exposure to dioxin. The purpose of this project is to further the scientific understanding of dioxins and their effect on the human body through a comprehensive study of the health status of former and present Krummrich plant workers exposed to dioxin.

Q2. Who is conducting this health study?

A2. The study will be independently conducted by Chicago's Northwestern University. Northwestern is one of this country's leading academic and scientific institutions with experts in medical and related fields and is eminently qualified to undertake such a project.

Q3. Why do a study at the Krummrich Plant?

A3. Between 1938 and 1983 the Krummrich Plant manufactured or handled materials which today we know could have been contaminated with dioxin. Consequently, the plant has a worker population of current, retired and former employees on which to base a study of this kind.

Q4. How many people will be involved?

A4. We anticipate that between 300 and 600 current, retired and former employees will participate.

Q5. What's involved for individual participants?

A5. The participants will undergo an extensive medical work-up and physical examination. The work-up involves the taking of complete medical, occupational, environmental and reproductive histories. The comprehensive physical examinations will include a complete exam by an internal medicine specialist plus dermatologic and neurologic exams, electrocardiogram, pulmonary function tests, chest X-ray, blood and urine tests.

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- Q6. Will the participants be given their test results?
- A6. Yes, of course. In fact, some results will be given verbally while the doctor is doing the examination. Participants will also be notified as soon as possible of the results of those tests which need several weeks to be analyzed. When the study is completed, participants will also receive a copy of the report.
- Q7. How long will it take to conduct the examinations?
- A7. A full day examination program for each participant. It will take about ten weeks to complete the group.
- Q8. Where will the examinations be conducted?
- A8. Northwestern's team of doctors and medical technicians will conduct all examinations at the plant. Appropriate examination and testing equipment needed will be brought into the plant by Northwestern.
- Q9. What do you expect to find?
- A9. We hope the study will answer the questions that remain about possible or suspected long term health effects of dioxin exposure such as whether there are any effects other than chloracne (e.g., heart or blood vessel diseases; cancer; endocrine disease; porphyria; immunological disease).
- Q10. The health questions associated with dioxin are not new. Why has it taken so long to start this study?
- A10. The proven long term health effect of dioxin is not new, namely a skin condition called chloracne. But there are a number of suspected or possible effects that still need more study to properly determine the relationship to exposure. Most experts agree that the state of scientific knowledge about dioxin's effects, or lack of effects in some instances, can be better understood by more detailed studies of groups such as those at Krummrich.

Q11. Has anyone other than Monsanto and Northwestern reviewed the study plans?

A11. The study has been and will continue to be peer-reviewed by acknowledged experts from other universities, the National Institute on Occupational Safety and Health (NIOSH), the U.S. Air Force (because of their dioxin experience with Agent Orange) and the physician consultant for the International Chemical Workers Union.

Q12. Hasn't Monsanto conducted its own studies on dioxin exposure?

A12. Yes, a major health study was completed in 1982 by Dr. Raymond Suskind of the University of Cincinnati on a group of Monsanto workers at our Nitro, W.Va., plant. Results of his study found no link between exposure to dioxin and cancer, cardiovascular disease or reproductive abnormalities.

Also in 1979 a more limited study on employees from Krummrich's chlorophenol department was conducted. Though a number of cases of chloracne were observed, no other health effects were seen in the employees that were considered related to dioxin exposure. These cases were caused by the form of dioxin found in pentachlorophenol which is less toxic than the highly publicized 2,3,7,8-TCDD.

Q13. What products at the Krummrich Plant could have been contaminated by dioxin?

A13. Chlorinated phenols and 2,4,5-T. Chlorinated phenols were manufactured at Krummrich between 193__ and 1983 and were products used in household and industrial disinfectants and cleaners, dyes, agricultural chemicals and wood preservatives.

2,4,5-T, though never manufactured at the plant, was handled between 196__ and 1972 when the plant formulated the herbicide Agent Orange for the U.S. government.

Q14. How much will this cost Monsanto?

A14. Approximately \$2 million.

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Q15. With Monsanto paying for the study, how can it not be biased?

A15. To imply that the findings of the study will be biased in the company's favor is ridiculous. Northwestern is a highly respected university and to suggest that the study's results will be influenced by Monsanto in any way impugns the credibility of Northwestern and members of its faculty.

Q16. How long before Northwestern's study is finished?

A16. Participants should have all of their individual examination results in about one month. The completed study, with all the statistical evaluation and scientific peer reviews, will take one and one-half to two years.

Q17. Will Monsanto release the results?

A17. Northwestern will publish the study and its results when it is completed, not Monsanto.

Q18. Will Monsanto review results as study is in progress? Will Monsanto review, clear or approve study before it is published?

A18. *Monsanto will review elements of the study while it is in progress as an additional quality control check and as an aid to Northwestern, but Monsanto will not have access to the names of individuals examined. Monsanto will review the study prior to publication as will the peer review committee. However, Monsanto will not have the authority to clear or approve the study.*

JNA.
11-25-85

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