C O P Y

FEDERAL SECURITY AGENCY
PUBLIC HEALTH SERVICE
Washington 25, D.C.

In Replying, Address The
Public Health Service

Refer to: DOH

July 15, 1952

Mr. J. P. Woodard
Director of Personnel Policies
Johns-Manville Corporation
22 East 40th Street
New York, New York

Dear Mr. Woodard:

Enclosed herewith is "A Prospectus Of An Occupational Health Study In The Diatomaceous Earth Industry." Copies of this document are being submitted to Johns Manville Corporation, Great Lakes Carbon Company, California Department of Health, Dr. A. J. Lanza, Dr. W. P. Shepard, and Dr. Reginald Smart.

This document is an outgrowth of the meeting that was held in Los Angeles on May 7, 1952, at which Mr. H. N. Doyle represented the Division of Occupational Health, Public Health Service.

The Prospectus gives a general outline of the procedure this Division will use in conducting the health study. It is possible that we may wish to make slight alterations in this plan after the preliminary survey has been completed. It is our plan to have Dr. D. A. Birmingham, Dr. L. J. Cralley, and Dr. J. C. Parker in the Los Angeles area about August 11 for the preliminary survey. We shall establish a definite date about August 1. Dr. L. J. Cralley who is chief of our Salt Lake City office will be in charge of the study.

I am also enclosing a "Memorandum of Agreement." The purpose of this document is to define the responsibilities of the participating companies and agencies. Your comments on this document will be appreciated. If all parties are in accord, I would suggest that it be signed when our representatives are in Los Angeles about August 11.

We welcome this opportunity to study the diatomaceous earth industry and look forward to working with you in the future.

Yours very truly,

Seward E. Miller, Medical Director
Chief, Division of Occupational Health

Enclosures - 2

Seward E. Miller of the Public Health Service to J. P. Woodard on the Diatomaceous Earth Study (1952), Letter, Jul... Published by AsbestosClaims.Law
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COPY

MEMORANDUM OF AGREEMENT
BETWEEN REPRESENTATIVES OF THE U. S. PUBLIC HEALTH SERVICE,
CALIFORNIA DEPARTMENT OF HEALTH, JOHNS MANVILLE CORPORATION
AND THE DICALITE DIVISION OF THE GREAT LAKES CARBON COMPANY
ON THE CONDUCT OF AN OCCUPATIONAL HEALTH STUDY
IN THE DIATOMACEOUS EARTH PRODUCING INDUSTRY

In order to obtain scientific information on the health effects of diatomaceous earths, it is essential than an impartial fact-finding occupational health study be made of the diatomaceous earth producing industry. The purpose of such a study is to:

1. Ascertain the possible health hazards associated with the extraction and processing of diatomaceous earths.

2. Study the health of the workers in the industry with special emphasis on the extent of pneumoconiosis which has been previously reported to be present in the workers of this industry.

3. Develop, if possible, a maximum allowable concentration for diatomaceous earth in its various forms, with reference particularly to pneumoconiosis.

4. Determine control measures which may be necessary in order to prevent the development of occupational disease.

In order to obtain the necessary scientific information, the Division of Occupational Health, United States Public Health Service, will conduct medical and environmental studies in the industrial plants concerned, as has been outlined in "A Prospectus of An Occupational Health Study in the Diatomaceous Earth Industry."

The medical studies will consist of detailed medical examinations, including chest X-ray, of the workers and will include a study of all past and current medical records from various sources; community X-ray studies; and a medical study of a control group not employed in the diatomaceous earth industry.

The environmental studies will consist of a detailed evaluation of the work area in order to determine the workers' exposure to atmospheric and contact contaminants. The study will also attempt to determine the level of exposure as well as the physical, mineralogical and chemical properties of the materials to which the workers are exposed. The extent of the community air pollution problem also will be determined.

Before the scientific investigation is made, it is essential that a preliminary survey be made to reveal the number of persons employed in the various occupations in each establishment, the nature of each particular operation, the raw materials or by-products which are associated with each operation and certain information on facilities afforded the worker in the industrial environment.

Full cooperation of the parties to this agreement is essential to the accomplishment of the purposes of the study; therefore, their individual responsibilities should be clearly understood. It is agreed by the representatives that:

1. The Division of Occupational Health, United States Public Health Service (hereinafter referred to as the "Service"), will undertake the responsibility of organizing and guiding the study to its completion, including an analysis of the data obtained and the preparation for publication of a report covering the results of the study.

2. A report of the study will be issued as a publication of the Service. The published report will not divulge data identifying any one plant or individual.

3. The information obtained by medical examinations of the workers and control groups remains the property of the Service and will be treated as confidential. Individuals examined will be notified by the Service of any abnormalities found. When directed to do so by the individual examined, the Service will inform his personal physician of the details of the examination.

4. The Service will assign personnel, provide equipment and will make available previously acquired data for the study. The Service will assume all costs incident to its participation in the study including salaries and travel expenses of Service personnel.

5. The California Department of Public Health (hereinafter referred to as the "State") will assign personnel, provide equipment and will make available previously acquired data for the study. The State will assume all costs incident to its participation in the study including salaries and travel expenses of State personnel.

6. The Johns-Manville Corporation and the Dicalite Division of the Great Lakes Carbon Company (hereinafter referred to as the "Companies") will:

a. Permit authorized personnel of the Service and State to enter their various plants and establishments to make the preliminary surveys, to study the working environment, to conduct medical examinations of the employees, and to carry out all other necessary phases of the study.

b. Allow their employees to be examined by the medical field team of the Service and State.

c. Compensate their employees at their established rates of pay for the time required for their medical examinations.

d. Provide space for the conduct of the medical examinations of their employees.

e. Each, appoint a responsible official to act as liaison between the company and the chief of the field party designated by the Service.

f. Extend full cooperation in all respects necessary for the successful completion of this undertaking.

7. Any publicity regarding the study proposed to be released prior to the completion of the study and publication of the report will be done so only by mutual consent of the Service, the State, and the Companies.

8. Further negotiations may be necessary to determine the methods of financing special medical studies that may be desirable, such as pulmonary function test, which cannot readily be undertaken by the field medical team. Dr. Reginald Smart, Dr. Walter W. Anderson, Dr. W. P. Shepard, and a physician to be designated by the Service and the State will act in an advisory capacity in recommending such studies.

9. This agreement or any portion thereof may be amended or modified by mutual consent of the parties.

We, the undersigned, hereby agree to cooperate in the conduct of an occupational health study in the diatomaceous earth producing industry on the basis of the above memorandum.

For U. S. Public Health Service

Date _____

For California Department of Public Health

Date _____

For Johns Manville Corporation

Date _____

For the Dicalite Division, Great Lakes Carbon Company

Date _____

A PROSPECTUS OF AN OCCUPATIONAL HEALTH STUDY IN THE DIATOMACEOUS EARTH INDUSTRY

Until about 1932 there existed reasonable doubt that diatomaceous earths were capable of producing a disabling pneumoconiosis in human workers. Studies by Legge and Rosencrantz in 1932 reported x-ray evidence of a rather high incidence (68.5%) of pneumoconiosis among a selected group of Mexican workers exposed to diatomaceous earths. In 1935 Beintker concluded that up to that time serious pneumoconiosis in man due to the inhalation of kieselguhr had not been observed. In 1943 Nordman reported six autopsies on individuals employed in the kieselguhr industry in Germany who had been exposed to dusty operations for periods varying from two to sixteen years. Typical nodular silicosis was reported in each case. Subsequent reports from Italy have indicated that diatomaceous earth workers in that country develop a disabling pneumoconiosis when exposed to heavy concentrations of diatomaceous earth dust. Gardner induced discernible clinical pulmonary changes in animals by experiments at Saranac Lake with various crude and calcined diatomaceous earths. Within the past ten years a number of claims for compensation for pneumoconiosis from workers employed in the diatomaceous earth industry have been filed with the California Industrial Commission.

Presently there exists a wide difference of opinion concerning the pathological effects of diatomite in its various forms. There are several reasons for these differences of opinion, including the varying composition of the natural diatomite deposits as found the world over and also due to the differences in the manufacturing methods. In this industry there have been significant changes in the manufacturing methods during

the past 25 years. There have been no published industrial medical studies which have attempted to coordinate the workers' exposure to diatomaceous earth with the pneumoconiosis.

Recognizing the urgent need for industrial medical studies in the diatomaceous earth industry, the Division of Occupational Health, U. S. Public Health Service, in cooperation with the California Department of Public Health and the various industries concerned, herewith agrees to conduct an occupational health study in this industry in California.

An invitation to conduct this study in California has been received from Dr. A. J. Lanza on behalf of the Johns Manville Corporation and the Great Lakes Carbon Company, by the U. S. Public Health Service.

The purpose of this study is to ascertain the possible health hazards associated with the extraction and processing of diatomaceous earths; to study the health of the workers in the industry with special emphasis on the extent of pneumoconiosis; and to develop methods which will prevent the occurrence of occupational diseases in the diatomaceous earth industry. Another purpose of this study will include an attempt to determine whether or not a correlation exists between medical findings and environmental findings; if such a correlation is found, it may be possible to determine maximum allowable concentrations of diatomaceous earth in its various forms. Efforts will be made to determine control measures which are necessary in order to prevent the occurrence of pneumoconiosis. It is realized that to accomplish this aim such a study may extend over a considerable period of time and include serial observations both medical and environmental in order to reach definitive answers. Such a study must be a fact finding investigation, and will not include therapy as a constituent part of the investigation.

I. Basic Questions Involved

In order to obtain difinitive answers, the following basic questions must be considered:

A. What is the present pneumoconiosis problem in the diatomaceous earth producing industry?

1. What ~~are the various degrees~~ as the extent, degree, and prevalence of pneumoconiosis as revealed by ~~x-ray, and their prevalence?~~ D.E., S.K

2. What is the relationship between the various degrees of x-ray changes to clinical manifestations, physiological changes, pathological findings and disability?

3. What is the relationship of all of the manifestations mentioned in (2) to the degree of exposure?

B. Is a pneumoconiosis produced by diatomaceous earth typical of silicosis? If not, wherein does it differ?

C. Is there a correlation between certain occupations within the industry and the extent of positive or negative findings?

D. What is the significance of the several forms in which diatomaceous earth is handled in the etiology of disease?

1. Significance of sea water deposits.

2. Significance of fresh water deposits.

3. Significance of crude diatomaceous earths.

4. Significance of calcined diatomaceous earths.

5. Significance of flux-calcined diatomaceous earths.

6. Significance of natural powders of diatomaceous earths.

E. What is the relationship between particle size and the development of disease?

F. What are the chemical and physical characteristics of the various forms of diatomaceous earth dust and fume?

G. Is the etiological agent actually diatomaceous earth or is it some other mineral deposit or substance?

H. What is the relationship, if any, between diatomaceous earth pneumoconiosis, tuberculosis, and other respiratory diseases?

I. What are the necessary controls that must be used to prevent the development of pneumoconiosis?

II. General Methods of Study

A. Medical Studies

1. Medical examination of ~~all~~ workers employed in the industry ~~to include at least:~~ using methods developed by medical advisers

a. Chest x-ray, 14" x 17".

b. Other medical studies - as are indicated.

2. X-ray surveys of plant community residents for:

a. Extent of pneumoconiosis.

b. Extent of tuberculosis.

3. Studies of records

a. Medical records of past and present employees, including x-rays through official and private agencies and other sources where available.

b. Compensation records in states where available.

4. Physiological studies. (Type of studies to be determined by Dr. Birmingham, Dr. Smart, and others at a later date.)

5. Medical study of a control group. (Control group to be selected at a later date.)

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B. Environmental Studies

1. Dust studies

a. Concentrations at various operations.

b. Chemical studies to determine mineralogical properties.

c. Particle size of dust and fume.

d. Other mineral dust.

Dust studies will be made in accordance with standard techniques; however, so that the knowledge on the importance of sub micron sizes may be considered, the standard techniques will be supplemented by newer methods including electron microscopy on samples collected by cascade impactor, spiral sampler, thermal and electrostatic precipitator.

2. Ventilation studies

a. Ventilation versus dust and fume concentration.

3. Other environmental studies as determined.

4. Correlation of environmental data with medical findings.

5. Significance of air pollution in surrounding communities.

6. Chemical and mineralogical properties of sea and fresh water diatomite deposits.

III. Location of Problem

A. California

1. Lompoc

Johns Manville Corporation

Great Lakes Carbon Company

2. Los Angeles County, California

Great Lakes Carbon Company

B. Oregon - Terrebone

Great Lakes Carbon Company

C. Washington - Quincy

Frankenhoff Company

D. Nevada - Clark

Eagle-Picher Company

Note: Arrangements to date have only been negotiated with the Johns Manville Corporation, the Great Lakes Carbon Company, and the State of California.

IV. Mechanics of Carrying Out a Study

A. The Division of Occupational Health, U. S. Public Health Service, will assume responsibility for the overall conduct of the study and the responsibility for compilation of data and publication of the report. The study, however, is to be a cooperative project between the Division of Occupational Health, U. S. Public Health Service, and the industries concerned:

1. California Department of Public Health
2. The Division of Industrial Hygiene, Oregon Department of Public Health.
3. Division of Preventive Medical Services, Washington Department of Public Health.
4. Division of Sanitary Engineering, Nevada State Health Department.

Note: Arrangements to date have only been made with the California Department of Public Health.

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V. Time Duration and Cost of Study

A. Preliminary industrial hygiene surveys of plants to begin in August 1952. Anticipated date for medical and environmental studies, October-November 1952.

B. Duration of study - ~~One to three years~~ omit. It is believed that C. St. the initial field investigation involving plant studies will be complete within six months after initiation of the project. However, it is probable that the serial study previously referred to on Page 2 and the compilation of additional information may extend over a period of several years.

C. Cost of study

Cost of field studies will be assumed by the Public Health Service and the various states concerned, except that the companies concerned will be expected to provide time for a physical examination of employees during regular working hours and each company will appoint a person to act as liaison between the company and the field study group.