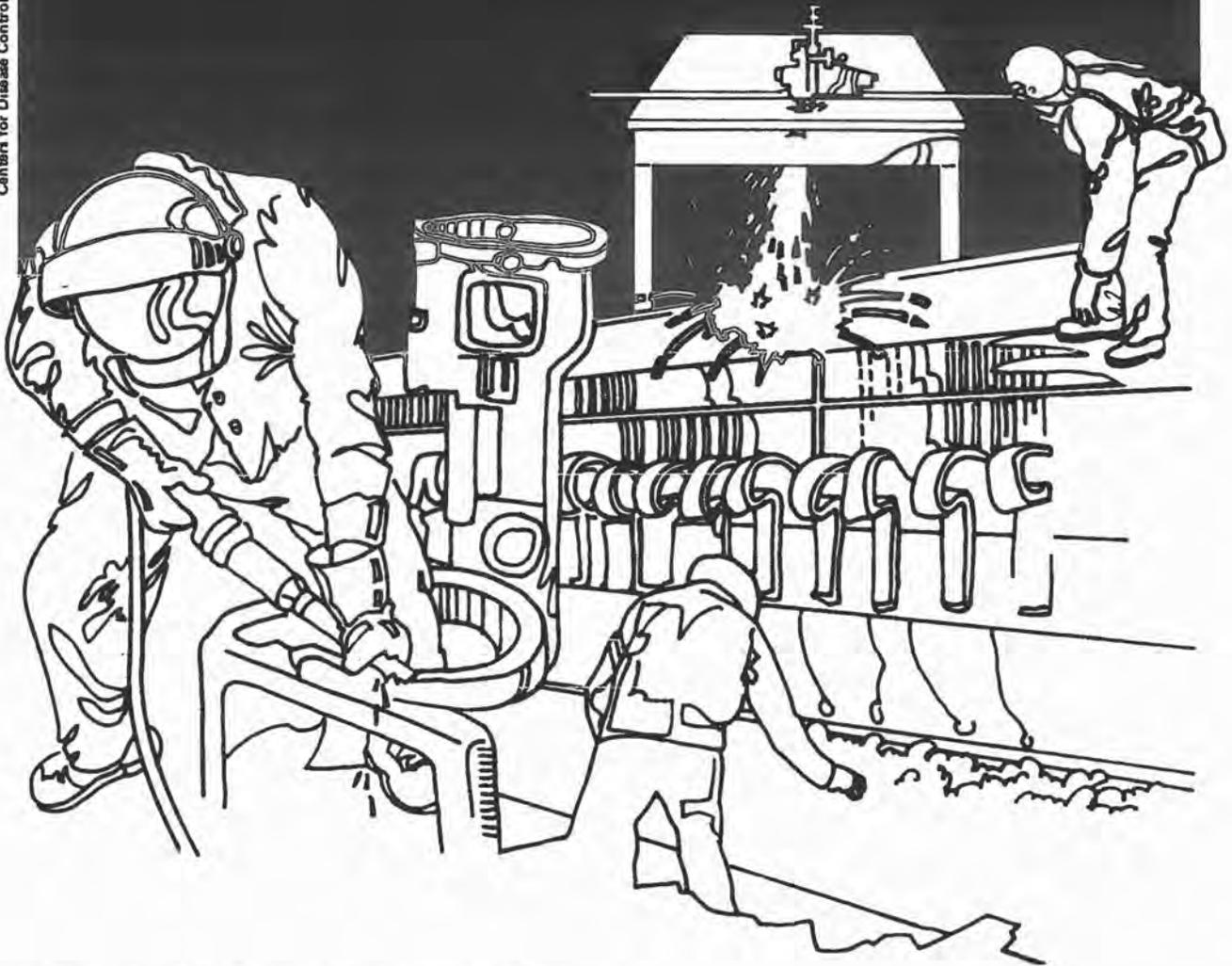


# NIOSH



## Health Hazard Evaluation Report

HETA 84-029-1427  
JEWISH FAMILY AND CHILDRENS AGENCY  
ARDMORE, PENNSYLVANIA

## PREFACE

The Hazard Evaluations and Technical Assistance Branch of NIOSH conducts field investigations of possible health hazards in the workplace. These investigations are conducted under the authority of Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6) which authorizes the Secretary of Health and Human Services, following a written request from any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The Hazard Evaluations and Technical Assistance Branch also provides, upon request, medical, nursing, and industrial hygiene technical and consultative assistance (TA) to Federal, state, and local agencies; labor; industry and other groups or individuals to control occupational health hazards and to prevent related trauma and disease.

HETA 84-029-1427  
MARCH 1984  
JEWISH FAMILY AND CHILDRENS AGENCY  
ARDMORE, PENNSYLVANIA

NIOSH Investigator:  
Walter J. Chrostek

## I. SUMMARY

In September 1983, the National Institute for Occupational Safety and Health (NIOSH) received a request to evaluate potential asbestos exposures at the Jewish Family and Children's Agency office, Ardmore, Pennsylvania. The agency was concerned that asbestos fibers may have become airborne because the asbestos ceiling recently cracked due to water leakage.

On November 15, 1983, NIOSH conducted an environmental survey of the office. Three area air samples all showed total airborne concentrations of asbestos fibers to be none detected at a limit of 0.01 asbestos fibers per cubic centimeter (f/cc) as compared to the Occupational Safety and Health Administration (OSHA) Standard for asbestos of 2.0 f/cc for an eight-hour average daily exposure. NIOSH recommends that exposure to asbestos be reduced to the lowest feasible limit. Two bulk samples, one from the ceiling and one from the duct, were examined by polarized light microscopy and dispersion staining techniques. The ceiling samples showed 1-2 percent chrysotile asbestos while the duct sample showed approximately five percent chrysotile asbestos.

Based on the above environmental results, it is concluded that office workers and consultants in the Jewish Family and Children's Agency were not exposed to airborne asbestos fibers at the time of this survey. Further details and recommendations are in this report.

KEYWORDS: 8999 (Social services), asbestos.

## II. Introduction

On September 18, 1983, NIOSH received a request for technical assistance from the district director of the Jewish Family and Children's Agency, Ardmore, Pennsylvania. The asbestos ceiling in the secretarial and receptionist area recently cracked due to water leakage, and employees and social workers were possibly exposed to airborne asbestos fibers. The ceiling material was evaluated by the Commonwealth of Pennsylvania Department of Environmental Resources (PA DER) in March of 1980 and found to contain 2-6 percent chrysotile asbestos; however, no air samples were collected.

The Jewish Family and Children's Agency is a nonprofit agency doing family and individual counseling. The Agency occupies a suite in a professional building. The suite consists of five offices and a reception room. The total area is approximately 1600 square feet with a ten-foot ceiling. This area has been occupied by the Agency for approximately 13 years.

As a result of the PA DER study of March 1980, a recommendation was made to encapsulate, with paint, the asbestos-containing board. This was done; however, prior to the submission of the request, a water leak occurred causing the paint to peel and exposing the asbestos containing board. There is a plenum which supplies the conditioned air into the reception room. This plenum has sides made of asbestos-containing board which has not been encapsulated.

## III. Evaluation Methods and Results

Three area samples for asbestos fiber were collected on 0.8-micrometer pore size mixed cellulose membrane filters in three-piece open faced filter holders. A personal sampling pump operating at 2.00 liters was used. The sampling time was approximately four hours. These samples were analyzed for asbestos fibers according to NIOSH Method P&CAM 239 utilizing phase contrast microscopy.

The air fiber concentrations for the three air samples were all less than the laboratory limit of detection (0.01 f/cc) as compared to the OSHA legal standard of 2.0 f/cc for an eight-hour average daily exposure. NIOSH recommends that exposure to asbestos be reduced to the lowest feasible limit. OSHA had proposed an Emergency Temporary Standard of 0.5 f/cc, however, it has been stayed.

Two bulk samples, one from the ceiling above the desk and one from inside the plenum were collected for asbestos analysis.

The samples were analyzed for percent and type of asbestos. All samples were examined for homogeneity. Non-homogeneous samples were ground manually to insure homogeneity.

Microscope slides were prepared from each sample using 1.55 refractive index liquid. The slides were then examined for the presence of asbestos utilizing polarized light microscopy and dispersion staining techniques. A Leitz Dialux 2-microscope equipped with a 16X objective and a 10X eyepiece was used for the analysis.

The percentage of asbestos was estimated microscopically by a visual examination of the fibers with an aspect ratio of 3:1 or greater. If present, asbestos identities were confirmed with the appropriate refractive index liquids applying dispersion staining techniques.

The samples were examined by two separate analysts and the results averaged.

The sample taken from above the desk contained 1-2 percent chrysotile asbestos, while that taken from inside the plenum contained approximately 5% chrysotile asbestos.

#### IV. Recommendations

It should be noted that some asbestos abatement experts believe that removal of asbestos containing material is the only final and satisfactory solution to the problem of potential asbestos exposure. As time passes, it would be expected that some deterioration would occur in the integrity of the board and the encapsulation. Such deterioration could possibly result in hazardous exposures to the personnel occupying these areas. Based on these findings and considerations, the following recommendations are made:

- 1) The unencapsulated duct should be treated so that any loose fibers do not enter the reception room. An alternative control would be to have the air enter through a galvanized duct.
- 2) Establish a periodic program of inspection to assure that the encapsulation has not deteriorated. Any deterioration, loose paint, should be promptly treated.
- 3) Maintenance personnel should be advised of the hazards of asbestos and supplied the proper disposable clothing and NIOSH approved respirators for asbestos. If any dust is generated, the area should be cleaned with high efficiency vacuums, wet methods and proper waste disposal (EPA approved packaging and disposal) practices should be instituted. These areas should be monitored prior to occupancy.

4) Should it become evident, as a result of the asbestos monitoring program, that asbestos fibers are reaching the normal work areas then it will become necessary to promptly remove, isolate, or encapsulate the asbestos containing board.

V. Authorship and Acknowledgements

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Originating office:	Hazard Evaluations and Technical Assistant Branch Division of Surveillance, Hazard Evaluations, and Field Studies Cincinnati, Ohio
Report typed by:	Mary Tomassini, Secretary

VI. Distribution and Availability of Report

Copies of this report are currently available upon request from NIOSH, Division of Standards Development and Technology Transfer, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days, the report will be available through the National Technical Information Service (NTIS), 5285 Port Royal, Springfield, Virginia 22161. Information regarding its availability through NTIS can be obtained from the NIOSH Publications Office at the Cincinnati address. Copies of this report have been sent to:

1. Jewish Family and Childrens Agency
2. NIOSH, Region III
3. OSHA, Region III

TABLE I

## Air Sample Results for Asbestos

Jewish Family and Children's Agency  
Ardmore, Pennsylvania

November 15, 1983

<u>Sample Time</u>	<u>Sample Location</u>	<u>Concentration (f/cc)*</u>
09:45-13:58	Reception Desk	N. D.**
09:53-14:00	Vent in Reception Room	N. D.
10:10-14:05	Room 9B	N. D.

Standards

NIOSH  
OSHA

Lowest Feasible Limit  
2.0 f/cc

\*Denotes - Fibers greater than 5 micrometers in length per cubic centimeters.  
\*\* N.D. - None detected, limit of detection is 0.01 f/cc.

TABLE II

## Bulk Sample Analyses for Asbestos

<u>Sample Site</u>	<u>Asbestos Content</u>
Reception Desk (Water Leakage Area)	1-2% Chrysotile
Inside Vent	Approximately 5% Chrysotile