To: Ozzie Williamson, Anderson Co. H.S.

I hadn't copied you on the original Asbestos Sampling project letter because I didn't realize that you still had asbestos concerns, but now that I know better I'd like to invite you to contribute to the database. The contribution of course would depend entirely on your contractors willingness to share their personal exposure da Can you check it out?

Laura

ALCOA
1501 Alcoa Building
Pittsburgh, Pennsylvania 15219

PLAINTIFF'S EXHIBIT AL-843

To: Joe Damiano

H. H. ROBERTSON CO.
CHEMICAL DEPT. TECH CENTER
NOV 24 1987
RECEIVED

Clayton Environmental Consultants, Inc.

22345 Roethel Drive • Novi, Michigan 48050 • (313) 344-1770

(2) Joe

Survey of Airborne Fiber Concentrations during removal of Asbestos-Containing Material at the H.H. Robertson Company Plant Ambridge, Pennsylvania

Clayton Job No. 33037-15

January 15, 1987

Galbestos was, I believe specified by an Alcoa Engr. Std for refineries and other "hostile" environments. It consists of corrugated metal with a tar based mastic coating incorporated in that coating is asbestos

★ Who would I need to talk to If I wanted to use some of this data in my asbestos data pool I would also need additional details.

Survey of Airborne Fiber Concentrations
during removal of Asbestos-Containing Material
at the
H.H. Robertson Company Plant
Ambridge, Pennsylvania

Clayton Job No. 33037-15

Clayton Environmental Consultants, Inc.

22345 Roethel Drive • Novi, Michigan 48050 • (313) 344-1770

1.0 INTRODUCTION

H.H. Robertson, through Mr. William A. Sunderman, Manager of Chemical Services, retained Clayton Environmental Consultants, Inc. to conduct a survey of airborne fiber concentrations during the removal of Hot Melt polyester coating from aged Galbestos, at the H.H. Robertson Company Plant in Ambridge, Pennsylvania. The purpose of this survey was to conduct air sampling to measure possible exposures of contractor personnel, as well as employees and visitors of H.H. Robertson Company. Air monitoring was performed by Mr. Timothy P. McKenna of Clayton on May 1, 1986.

The results of analysis of air samples collected during the project are presented in Appendix A. Appendix B contains a diagram of the work areas. Appendix C contains a description of the sampling and analytical methods used in this study. Appendix D contains a description of the health effects associated with asbestos exposure.

2.0 SUMMARY AND RECOMMENDATIONS

On May 1, 1986, air monitoring was performed during the removal of aged Galbestos Hot Melt coating. Galbestos is a multi-layered protected metal cladding material. It is composed of galvanized steel core coated by a layer of asphalt impregnated asbestos felt, which in turn is coated with a Hot Melt polyester coating. The removal of the Hot Melt coating lasted 8-hour a full shift and included work area cleanup at the end of the shift. Samples were collected in areas 1, 2, 3, and 4 and personnal samples were collected on workers Melvin O'Neil and Lance Brewer. Results of analysis of samples collected were at and below 0.04 fibers/cc. Personnal samples collected were at and below 0.04 fibers/cc.

No sample indicated an airborne fiber concentration exceeding the 0.1 fibers/cc level at which National Institute for Occupation Safety and Health (NIOSH) considers workers "exposed" for purposes of requiring employers to provide medical surveillance of employers.

From PITTSBURGH OFFICE To

1988 February 18

RE: ASBESTOS SAMPLING DATA COLLECTION PROJECT - ORC

Alcoa will be participating in an asbestos data collection project in conjunction with several other large industrial concerns under the auspices of Organization Resources Counselors, Inc. (ORC). This will enable us to pool asbestos exposure data with the various industries involved which will benefit Alcoa in two ways.

1. Having access to this sort of data will enable industrial hygienists to anticipate potential exposure levels associated with specific asbestos jobs and environmental controls. This information could then be used to plan specific job procedures and protective measures necessary for jobs.

2. If an asbestos job being conducted in an Alcoa plant is analogous to one in the sampling data pool, expensive and time consuming daily sampling required under the OSHA Asbestos Construction Standard may not be necessary. Reliance upon sampling data from the pooled data after our own initial sampling would make this possible. Reliance upon historical data is allowed under the OSHA Standard. The industrial hygienist would then be free to determine the sample frequency based upon professional judgement rather than having to meet the arbitrary sample frequency from the OSHA standard.

The type of tasks being studied in this phase of the data collection project are those having exposures less than the action level (0.1 fibers/cc). For the purposes of this project these will be called "small jobs." Please use the attached form as a "master" in order to supply necessary information on the personal sampling data which has been done using the new sampling method specified in 29CFR 1926.58 (25 mm diameter filters). Only data which has been collected after the publication of the new OSHA asbestos rules can be used for this project. Each asbestos sampling data sheet will contain asbestos exposure data for one person performing one task. Please send completed asbestos sampling data sheets to the writer.

All company and employee identification will be treated as confidential information and will be available only to Alcoa and ORC. This information will be removed from the form before transmittal to the company that has been contracted to computerize the data.

ALCOA

The data collection phase of this project is expected to be completed 24 August 1988 and no data can be accepted after that date. This project has a potential of being able to provide Alcoa with valuable information but in order to have access to that information, we must contribute information. I encourage you to participate.

Laura

LAURA RIPPEY

asbest3.LLR

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ASBESTOS SAMPLING DATA SHEET

Small Jobs

ORC Asbestos Data Collection Project

Please Use Red Ink to Complete the Form

1. SHEET NUMBER_____

2. TASK (REMOVAL OF ACM IS NOT PRIMARY GOAL)

a. TASK DESCRIPTION (CHECK ONE PER SAMPLING ACTIVITY)

- ☐ Open ceiling tiles
- ☐ Remove cable cover
- ☐ Cable maintenance
- ☐ Splicing cable
- ☐ Pulling cable
- ☐ Task clean-up
- ☐ Equipment installation
- ☐ Equipment removal
- ☐ Brake work
- ☐ Clutch work
- ☐ Gasket work
- ☐ Boiler maintenance
- ☐ Pipe maintenance
- ☐ Valve maintenance
- ☐ Other equipment maintenance _____
- ☐ Shipwork_____
- ☐ Other_____

b. ACM ACTIVITY RESULTING FROM TASK (CHECK ALL THAT APPLY)

- ☐ Wetting
- ☐ Removal
- ☐ Bagging
- ☐ Transportation
- ☐ Drilling/cutting/grinding
- ☐ Incidental disturbing
- ☐ Other_____
- ☐ None

c. ACM FORM (CHECK ALL THAT APPLY)

- ☐ Sprayed on insulation
- ☐ Troweled on insulation
- ☐ Equipment insulation
- ☐ Boiler insulation
- ☐ Pipe insulation (g.t. 12" diamete
- ☐ Pipe insulation (l.t. 12" diameter
- ☐ Pipe fittings
- ☐ Transite Pipe
- ☐ Floor tiles
- ☐ Ceiling tiles
- ☐ Roofing
- ☐ Transite Board
- ☐ Asbestos cement
- ☐ ACM fabricated items
- ☐ Other_____

d. ACM LOCATION (CHECK ALL THAT APPLY) (Telecom/Utility Specific)

- ☐ Above hung ceiling
- ☐ Beams/columns
- ☐ Crawl space
- ☐ Tunnel
- ☐ Manhole
- ☐ Cable vaults
- ☐ Piping
- ☐ Other

e. LOCATION OF JOB WITH RESPECT TO ACM (Telecom/Utility Specific)

- ☐ Adjacent to
- ☐ On
- ☐ Through
- ☐ Other_____

ORC Asbestos Data Collection Project

SHEET NUMBER_____

f. DISTANCE TO ACM
(Telecom/Utility Specific)

- ☐ <1 ft.
- ☐ 1-3 ft.
- ☐ 3-5 ft.
- ☐ 5-10 ft.
- ☐ 10-20 ft.
- ☐ >20 ft.

3. TYPE OF ASBESTOS
(INDICATE % IF KNOWN)

- ☐ _____% amosite
- ☐ _____% chrysotile
- ☐ _____% crocidolite
- ☐ Unknown

4. ACM CONDITION

- ☐ Loose/friable
- ☐ Hardened/non-friable
- ☐ Encapsulated

5. ACM DISTURBED

- ☐ Yes ☐ No

6. ESTIMATED AMOUNT OF ACM REMOVED

- _____square feet
- _____cubic feet
- _____linear feet
- _____pipe diameter
- ☐ unknown
- ☐ none

7. OTHER FIBROUS MATERIALS PRESENT

- ☐ Yes ☐ No ☐ Unknown

8. PHYSICAL CONDITIONS

a.
- ☐ Indoor
- ☐ Outdoor

b.
- ☐ Elevated
- ☐ Ground level
- ☐ Below ground

c. Temp. of Equipment
(if applicable)
- ☐ approximately ambient
- ☐ above ambient
- ☐ below ambient

d. Air Temperature
(when task begun)
- ☐ >32°F
- ☐ <32°F

Air Temperature
(when task completed)
- ☐ >32°F
- ☐ <32°F

e. Wind speed
(if applicable)
_____mph

9. STRUCTURE OWNERSHIP

- ☐ Company Owned
- ☐ Leased
- ☐ Customer Premise

SHEET NUMBER_____

10. STRUCTURE
(COMPLETE EITHER A *OR* B)

a. Type of Building
(CHECK ONE)

- ☐ School
- ☐ Hospital
- ☐ Office
- ☐ Telecom Central Office
- ☐ Warehouse
- ☐ Factory
- ☐ Garage
- ☐ Residential

b. Structure If other than building
(specify, ex. tower, boiler, etc.)

_____

11. CONTROL METHODS
(CHECK ALL THAT APPLY)

- ☐ Enclosure (without negative pressure)
- ☐ Enclosure (with negative pressure)
- ☐ Power tool with HEPA exhaust ventilation
- ☐ Local exhaust ventilation with fiber capture
- ☐ Wetting agent
- ☐ Glove bag
- ☐ HEPA vac
- ☐ Wet wipe
- ☐ Alternate route (telecom/utility)
- ☐ Removal of entire structure
- ☐ Mini Enclosure
- ☐ Other
- ☐ None

12. SAMPLING/ANALYTICAL METHOD

- ☐ Appendix A OSHA Standard
- ☐ Appendix A OSHA Standard; (37 mm cassette)
- ☐ Confirmatory Analysis (by SEM, TEM, XRD, PLM)

_____

- ☐ Other_____

13. SAMPLING COMPLETED BY

- ☐ In-house
- ☐ Contractor
- ☐ Third-party contractor

14. PRIOR KNOWLEDGE OF PRESENCE OF ACM?

☐ Yes ☐ No ☐ Unknown

15. REMARKS

OHC Asbestos Data Collection Project

SHEET NUMBER_____

1. Cassette #: * _____
   (One worker only; One task only)
   * If more than one cassette is used for the same task number each separately but combine the data for the questions below.

2. Date of Sample: ____/____/____
   (month) (day) (year)

3. Sample duration: (minutes) _____

4. Fiber Concentration: (f/cc) _____

5. Fiber Count: (f/100 fields) (if available) _____

6. Actual TWA Exposure: _____

7. 8 hour TWA Exposure: _____

8. Pump flow rate: (ltr/min) Pre-sample _____ Post-sample _____
   Date Checked Pre: ____/____/____ (month) (day) (year) Post: ____/____/____ (month) (day) (year)

9. Pump Serial Number_____

10. Worker ID (if applicable): _____

11. Upset conditions ☐ Yes ☐ No

Comments (spills, unplanned events, etc.)

_____
Signature/title of person filling out form

Print name in full:_____ Phone No._____

Company name (print) _____

City _____ State _____

INSTRUCTIONS FOR FILLING OUT ASBESTOS SAMPLING DATA SHEET FOR SMALL JOBS

1. Sheet Number

The sheet number will be preassigned.

2. Task

The Asbestos Sampling Data Sheet is to be completed only for jobs in which removal of asbestos containing material (ACM) is not the primary goal.

a. Task Description

What is the nature of the actual work being performed? Check the one entry which best describes the task.

b. ACM Activity Resulting from Task

What was done in regard to actually working with or handling the acm:

c. ACM Form

What is the form of the ACM encountered on the task? Check all that apply.

Questions 2(d), 2(e) and 2(f) are to be completed only by telecommunications and utility industry employees.

d. ACM Location

Where is the specific location of the ACM encountered on the task?
Check all that apply.

e. Location of Job with Respect to ACM

Where, in relation to the ACM, is the task being performed?

f. Distance to ACM

What is the distance between the site of the task and the ACM. If the distance varies, indicate the average distance.

3. Type of Asbestos (Indicate % if known)

What type of asbestos is present - amosite, crocidolite, chrysotile, unknown?
Check all that apply and, if possible, indicate the percentage of amosite, crocidolite, and/or chrysotile present in the ACM.

4. ACM Condition

Is the material being removed loose, crumbly, - does it flake off, when worked with; is it hard to the touch; or has it been encapsulated with another material?
Check the appropriate box.

5. ACM Disturbed?

Was the ACM disturbed during the task.
Check the appropriate box

6. Amount of Asbestos Removed During Sample

How much asbestos was removed if any? Estimate in lengths of pipe removed, square feet of boiler insulation, or tiles etc. Fill in the appropriate amount.

7. Other Fibrous Materials Present

Are fibrous materials other than asbestos present?
Check the appropriate box.

8. Physical Conditions

a. Location

Is the task being performed indoors or outdoors?
Check the appropriate box.

b. Elevation

Is the task being performed at ground level, above ground level or below ground?
Check the appropriate box.

c. Temperature of Equipment

If the task involves working on equipment that has ACM content, indicate the temperature of the equipment.

d. Air Temperature

Indicate whether the temperature is above or below freezing when the task is started and whether it is above or below freezing when the task is completed
Check the appropriate box.

9. Structure Ownership

Is the task being performed on a company owned premise, company leased premise, or customer owned premise? This question addresses premise ownership only. Ownership of the ACM equipment or materials being worked on (i.e. phone company cables etc.) is not the focus of this question.
Check the appropriate box.

10. Structure

Complete only section a) - type of building or section b) type of structure if other than a building. Do not complete both sections.

a. Type of Building

If in a building, in what type of building is the task being performed?
Check the appropriate box.

b. Structure if Other than a Building
If other than a building, identify the type of structure the task is being done in, or on (ex., tower, boiler, etc.)

11. Control Methods

What method(s) are being used to minimize the release or generation of airborne asbestos fibers?
Check all that apply.

12. Sampling/Analytical Method

What method is being used to analyze samples for the presence of asbestos, and if that test indicates the presence of asbestos, what kind of confirmatory analysis is performed?
Check the appropriate box or identify alternate method of analysis.

13. Sampling Completed By:

Was the sampling done by company employees, by an outside consultant/contractor hired by the company, or by a third party hired by the company's outside contractor?
Check the appropriate box.

14. Prior Knowledge of Presence of ACM:

Was there knowledge of the presence of ACM before the task was begun?
Check the appropriate box.

Each Task is to be Monitored from Start to Finish for the Purposes of this Survey

B. AIR SAMPLING DATA

1. Cassette #. One Worker Only. One Task Only

   Each cassette should be given a distinct identification number. If more than one cassette is used for a single task, record a separate number for each cassette in this space, combine the data for the separate cassettes and record the data requested below for the task. Indicate the reason for using more than one cassette in the comment section.

2. Date of Sample:

   Enter month, day and year.

3. Sample Duration (Minutes)

   Sampling should begin when the task is initiated and end when the task is completed. The sample duration should be identical to the duration of the task.

4. Fiber Concentration

   Record the fiber concentration (fibers per cc) as determined from the laboratory analysis. Use "GT" and "LT" for "greater than" and "less than" (respectively). If the sample filter is overloaded, note GT before the result.

5. Fiber Count (f/100 fields)

   Enter fibers/100 fields fiber count if this information is available or obtainable.

6. Actual TWA Exposure

   What was the time weighted average exposure for the duration of the job. This is to be determined from the information provided in numbers 3 (sample duration) and 4 (fiber concentration) above.

7. 8 Hour Time Weighted Average Exposure

   If more than one sample was taken on a person during a shift, a time weighted average should be calculated using the below formula:

$$\frac{C1T1 + C2T2 + \ldots CnTn}{T1 + T2 \ldots Tn}$$

   Cn = the fiber concentration for sample n
   Tn = the sample duration for sample n

7. 8 Hour Time Weighted Average Exposure (Cont.)

In extrapolating from an acm exposure period of less than 8 hours to an 8 hour time period, assume zero exposure during the time in which no acm task is being performed and no sampling for acm is being done.

8. Pump Flow Rate: (Liters/Min)

The pump flowrate should be the averaged flowrate as determined by calibration with a primary standard such as a bubble tube. Enter the date the pre-sample and post-sample flow rate was checked.

9. Pump Serial Number:

Enter the pump serial number

10. Worker ID:

Enter the worker identification number, if any, used by your company.

11. Upset Conditions

Was there a greater than normal exposure to asbestos due to an unplanned event? Specify the event in the comments section. Mark the appropriate box.

DKM/20

3.0 DESCRIPTION OF OPERATIONS

Removal at the H.H. Robertson Company Plant was monitored in four areas (refer to Appendix B). The actual removal consisted of scraping the Hot Melt Coating off the metal roof. After the Hot Melt Coating removal was completed, cleanup activities were performed.

The day was overcast with occasional periods of misting rain.

4.0 STANDARDS AND GUIDELINES

Various standards and guidelines have been established for exposure to asbestos. They can be grouped into those which apply to (1) employees, and (2) the general public.

Standards and guidelines which apply to employees are issued by the Occupational Safety and Health Administration (OSHA). OSHA's current asbestos standard is a permissible exposure limit (PEL) of 0.2 fibers (longer than 5 micrometers) per cubic centimeter of air (fibers/cc) as an 8-hour, time-weighted average (TWA) concentration limit. The standard also establishes an action level of of 0.1 fibers/cc at which medical monitoring and other requirements are triggered.

OSHA recently adopted a new standard which mandates a PEL of 0.2 fibers/cc (longer than 5 micrometers) as determined as an 8-hour, time-weighted average (TWA). The effective date of this standard for general industry is July 21, 1986. The effective date for the construction industry is January 1987. OSHA has also adopted an action level of 0.1 fibers/cc at which medical monitoring and other activities may be required.

Standards and guidelines pertaining to general occupancy and the public are established by the Environmental Protection Agency (EPA). The EPA-recommended guideline for general occupancy and for clearance after construction activities involving asbestos-containing materials is 0.01 fibers/cc.

This report submitted by: Timothy P. McKenna (TPM)
Timothy P. McKenna
Industrial Hygiene Technologist

This report approved by: Michael A. Coffman (MAC)
Michael A. Coffman, C.I.H.
Manager, Industrial Hygiene Services

January 15, 1987

APPENDIX A

RESULTS OF SAMPLING FOR AIRBORNE FIBERS

Results of Sampling for Airborne Fibers
at the
H.H. Robertson Company
Ambridge, Pennsylvania

May 1, 1986

Sample Number		Description	Sampling Period Start	Stop	Sampled Air Volume (Liters)	Fibers per Filter	95% Confidence Limits of Concentration (Fibers/cc Air)
AA-8328	1:	Removal of Hot Melt Coating Personnal Melvin O'Neil	0900	1225	553	14,000	0.02 ± 0.03
AA-8332	2:	Removal of Hot Melt Coating Personnal Lance Brewer	0900	1225	469	1,000	0.02 ± 0.03
AA-8325	3:	Removal of Hot Melt Coating Area 1	1125	1330	1,078	20,000	0.02 ± 0.02
AA-8334	4:	Removal of Hot Melt Coating Area 2	1125	1330	1,026	18,000	0.02 ± 0.02
AA-8355	5:	Removal of Hot Melt Coating Area 3	1125	1330	1,155	23,000	0.02 ± 0.02
AA-8333	6:	Removal of Hot Melt Coating Area 4	1125	1330	1,017	29,000	0.03 ± 0.03
AA-8346	7:	Removal of Hot Melt Coating rain delay personnal, Melvin O'Neil	1415	1645	405	11,000	0.03 ± 0.04
AA-8337	8:	Removal of Hot Melt Coating personnal Lance Brewer	1415	1645	349	12,000	0.0 4± 0.05

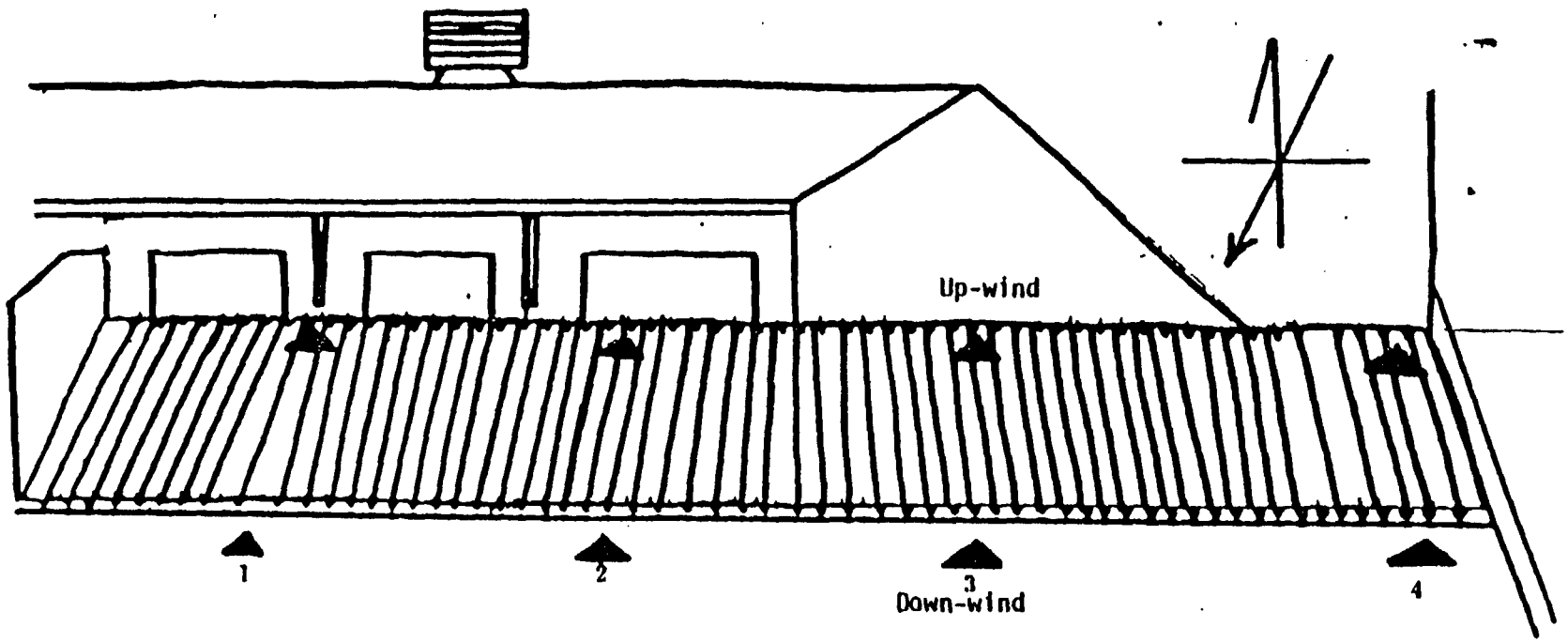
Results of Sampling for Airborne Fibers
at the
H.H. Robertson Company
Ambridge, Pennsylvania

May 1, 1986

Sample Number		Description	Sampling Period Start	Sampling Period Stop	Sampled Air Volume (Liters)	Fibers per Filter	95% Confidence Limits of Concentration (Fibers/cc Air)
AA-8370	9:	Removal of Hot Melt Coating Area 1	1420	1645	1,294	45,000	0.03 ± 0.03
AA-8345	10:	Removal of Hot Melt Coating Area 2	1420	1645	1,231	46,000	0.04 ± 0.04
AA-8348	11:	Removal of Hot Melt Coating Area 3	1420	1645	1,386	42,000	0.03 ± 0.03
AA-8342	12:	Removal of Hot Melt Coating	1420	1645	1,222	29,000	0.02 ± 0.02

APPENDIX B

DIAGRAM OF WORK AREA



Sampling Locations

Sampling Locations at the Ambridge Division Plant in Ambridge, Pennsylvania for H.H. Robertson Company
(May 1, 1986)

ASBESTOS

Samples for the determination of airborne fibers were collected by drawing air at measured flowrates through open-face cassettes containing 37-millimeter diameter cellulose ester membrane filters using battery-powered, portable pumps.

Samples were collected with the filter face downward. Area samples were positioned so that the filter was between 3 and 5 feet above the floor to approximate workers' breathing zone heights. Unless mentioned otherwise in the sample description, all area samples were collected at fixed locations throughout the sampling period.

Each sample was subsequently analyzed onsite for fibers using the microscopic technique currently specified by the National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods P&CAM 239. Briefly, the technique consisted of the following steps: a wedge-shaped sector of each filter was cut carefully from the sample and mounted on a standard microscope slide, using a high-viscosity solution of membrane filter material in a 1:1 mixture of diethyl oxalate and dimethyl phthalate to render the filter transparent. Fibers, defined as particles having aspect ratios (apparent length to width) of three or greater, which were visible on the surface of the filter, were counted using a binocular microscope equipped with 10x eyepieces and a 40x objective with phase-contrast illumination. Porton reticle fields, selected at random on the sample, were examined, and fibers greater than 5 micrometers in length were counted until either of two conditions was satisfied:

1. A minimum of 100 fibers was counted in 20 or more fields.

2. A minimum of 100 fields was examined.

Results of the microscopic analyses were used with field sampling data (measured flowrates and duration of sampling) to calculate the concentrations of airborne fibers corresponding to each sample in units of fibers greater than 5 micrometers in length per cubic centimeter of air.

APPENDIX D

TOXICOLOGICAL INFORMATION

ASBESTOS

Asbestos is a generic term referring to various fibrous mineral silicates, including chrysotile (hydrated magnesium silicate, amosite (iron-magnesium silicate), crocidolite (sodium-iron silicate), tremolite (calcium-magnesium silicate), anthophyllite (another iron-magnesium silicate), and actinolite (calcium-magnesium-iron silicate).

The potential health hazards associated with exposure to asbestos results from inhalation of airborne fibers; small asbestos fibers can pass readily through the upper respiratory tract and be deposited in the terminal bronchioles of the lung. There they can produce a local irritation which the body attempts to overcome by initiating a tissue response resulting in the encapsulation of the fibers and consequent formation of "asbestos bodies." Asbestos fibers are the causative agents in cases of asbestosis, a progressive disease characterized by diffuse interstitial fibrosis and, at times, pleural changes of fibrosis and calcification. It is often evident by such clinical signs as rales and dyspnea. In its severe form, asbestosis can contribute to, and result in, death due to the inability of the body to obtain oxyen or the heart to pump blood through the scarred lungs.

Exposure to airborne asbestos fibers has also been associated with bronchogenic carcinoma (a malignancy of the interior of the lung), mesothelioma (a diffuse malignancy of the lining of the chest cavity or abdomen), and cancer of the stomach, colon, and rectum. Cigarette smoking can enhance the incidence of bronchogenic carcinoma from this substance.

In order to protect workers from such occupational hazards, the Occupational Safety and Health Administration (OSHA) has established a permissible exposure limit of 0.2 fibers (longer than 5 micrometers) per cubic centimeter of air (fibers/cc) as an 8-hour, time-weighted average (TWA) concentration limit. This OSHA standard also specifies an action level of 0.1 fibers per cubic centimeter of air. The National Institute for Occupational Safety and Health (NIOSH) has recommended an 8-hour, TWA exposure limit of 0.1 fibers/cc, with a peak concentration limit of 0.5 fibers/cc based on a 15-minute sampling period.

The American Conference of Governmental Industrial Hygienists (ACGIH) has adopted 8-hour, TWA threshold limit values (TLVs), depending on the type of asbestos as follows:

Amosite:	0.5 fibers/cc
Chrysotile:	2 fibers/cc
Crocidolite:	0.2 fibers/cc
Other forms:	2 fibers/cc

ACGIH lists all forms of asbestos in the category of human carcinogens.