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Baltimore, Maryland 21201
Telephone 301 831-1930

Alexander
& Alexander

February 6, 1973

Mr. F. L. Gardener
Assistant Secretary
A C & S, Inc.
120 North Lime Street
Lancaster, Pennsylvania 17602

PLAINTIFF'S
EXHIBIT

12460.00

PLAINTIFF'S
EXHIBIT

WV-05537

INDUSTRIAL HYGIENE SURVEY
A C & S, INC.
COLUMBIA, MARYLAND

Dear Fred:

I have just had an opportunity to review a very good Industrial Hygiene Survey prepared by Mr. D. B. Troup, Industrial Hygienist, Aetna Life & Casualty Company. It appears that your efforts to reduce the amount of air contaminants at your Columbia, Maryland location have been very successful.

I would like to take this opportunity to again offer our services to you. If we can be of assistance at any time, please feel free to contact us.

Sincerely yours,

ALEXANDER & ALEXANDER, INC.

Chris McGee

Chris McGee
Loss Control Department

jh

cc: Mr. Wayne Seibold

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Telex 87974
Cable ALEXBLUE

WV-05537

REPORT OF
TECHNICAL SERVICES STUDY

PREPARED FOR: AC AND S, INC.
COLUMBIA, MARYLAND

5-4 175-

INDUSTRIAL HYGIENE SURVEY

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D. B. TROUP
INDUSTRIAL HYGIENIST

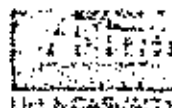
SURVEY DATE - DEC. 13, 1972

P.E. PERSONAL SERVICE
FROM THE OFFICE OF - ALEXANDER & ALEXANDER

This study is being made to assist the named insured in a loss control program. It is not intended to be used for any other purpose. It does not purport to indicate any loss potential, and is not to be used as a basis for any other action. These findings are based on the information provided by the insured and are not to be used as a basis for any other action.

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Not to be used for any other purpose



Not to be used for any other purpose

ACandS, INC.

December 13, 1972

PURPOSE:

On August 16, 1972, I made a survey of this asbestos operation, which included operators' breathing zone samples; as well as samples taken in the general area outside of the asbestos operations, as well as operators' breathing zone samples taken in adjacent rooms. At that time, we found some relatively high levels of asbestos and made some recommendations for improvement of the control of the asbestos dust, as well as the calcium silicate to control the hazard to the operator and those working in adjacent rooms. The recommendations were complied with and this survey was made to check the levels now in existence after the installation of new localized exhaust ventilation equipment.

CONTACT:

A. Stokley, District Manager; L. McNabb, Branch Manager.

CONCLUSIONS:

The localized exhaust ventilation installed at the calcium silicate, asbestos operation has been brought almost completely under control by the use of the manufacturer's recommended localized exhaust ventilation. The air movement at the sawblade, where the actual cutting takes place is at a velocity of approximately 64,000 feet per minute. All areas of the plant are well below acceptable limits for calcium silicate dust and asbestos fibers. There is a slight exposure to the operator at the actual cutting operation itself; however, some minor changes can bring this well within tolerable limits.

RECOMMENDATIONS:

A. The bandsaw should be more completely enclosed. This enclosure should be designed in accordance with good industrial ventilation principles and should be in accordance with the American National Standards Institute Z 9.2-1971. (OSHA 1910.93 a)


Donald B. Troup
Industrial Hygienist

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PROCEDURES:

Standard procedures upon which the Threshold Limit Values for asbestos is based was followed in air sampling entirely. The air samples were collected on open membrane AA filters at a sampling rate of two liters per minute for periods of 15 minutes, where possible. These filters were returned to our laboratory, where the number of fibers were counted at 430 X Phase Contrast Identification in accordance with the National Institute of Occupational Safety and Health published methods.

Air flow measurements were made with an Alnor Jr. Velometer.

Air sampling for dust at the operations was done by drawing air through midjet impingers with ethanol as the collecting medium. Dust counts were made in a microscopic light field, following the procedure outlined by the United States Public Health Service. Free silica in the dust was found to be below 1% and was determined by careful selection of samples and with the use of dispersion staining in our laboratory.

RESULTS:

The results are found in the Appendix at the end of this report.

DISCUSSION:

In evaluating the results of our air sampling, we used as a guide the Threshold Limit Values (TLV's), which have been adopted by the American Conference of Governmental Industrial Hygienists (ACGIH). These limits, for the most part, have been incorporated in the regulations of the Federal Occupational Safety and Health Act (OSHA). Threshold Limit Values refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse effect. Because of a wide variation in individual susceptibility, however, a small percentage of workers may experience discomfort from the substance at concentrations at or below the Threshold Limit, a smaller percentage may be affected more seriously by aggravation of preexisting condition or by development of an occupational illness.

Threshold Limit Values refer to time-weighted concentrations for an eight-hour workday and a 48-hour work week. They should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations.

Time-weighted averages permit excursions above the limit provided they are compensated by equivalent excursions below the limit during the work day. In some instances, given a permissible to calculate the average concentration for a work week rather than for a work day. The degree

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of permissible excursion is related to the magnitude of the Threshold Limit Value of a particular substance, as given in the Occupational Safety and Health Act. The relationship between these threshold limits and permissible excursion is a rule of thumb and in certain cases may not apply. All factors must be taken into consideration in arriving at a decision as to whether a hazardous condition exists.

For the purpose of this discussion, asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

Asbestos fibers mean asbestos fibers longer than five micrometers. Permissible exposure to airborne concentration of asbestos fibers, which was the standard effective July 7, 1972, on an eight-hour, time-weighted average airborne concentration to which any employee may be exposed shall not exceed five fibers longer than five micrometers per cubic centimeter of air, as determined by the method prescribed in the determination of airborne concentrations by the membrane filter methods at 400-450 X magnification (four millimeter objective, with phase contrast illumination).

It should be pointed out here that it is expected that as of July 1, 1976, the eight-hour, time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers longer than five micrometers, per cubic centimeter of air.

No employee shall be exposed at any time to ceiling concentrations of asbestos fibers in excess of 10 fibers per cubic centimeter of air.

Since the last visit to this location, when relatively high asbestos counts were found, localized exhaust ventilation and dust-collection systems have been used and by and large constructed and installed in accordance with the American National Standards Fundamentals governing the design and operation of local exhaust systems, ANSI Z 9.2-1971. Once these localized exhaust ventilations recommendations are completely complied with, I feel that the fibers to which all employees are exposed will be well within the five fiber limit.

I have enclosed a drawing at the end of this report which shows a more complete enclosure of the bandsaw to bring the asbestos fiber concentrations, as well as the calcium silicate dust concentration well below limits.

Asbestos fiber concentrations throughout the rest of the plant were found to be far below acceptable standards and I suggest that it is not necessary any longer for the men working the room adjacent to the sawing operation to wear face masks. Furthermore, anyone working in

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the warehouse area as well as those individuals exposed in the office area are well under acceptable asbestos concentrations.

I ran a qualitative analysis on the material being handled in this factory and found approximately 15% asbestos and approximately 85% calcium silicate. I found that the new installations have brought these chemicals completely under control.

In addition to the above-mentioned evidence, I would say that since in the fitting and fab shop, the silica is only worked with from three to six hours per day, this cuts the concentration exposure to an even lower limit.

I made a measurement of the velocity of the air, traveling at the point of source, where the bandsaw cuts the asbestos chunks and found it to be 64,000 feet per minute.

I also took samples in flange pad shop and found the asbestos count to be very low.

In addition, concentrations of asbestos in the warehouse were also very low and as long as adequate maintenance is continue on the collection systems, I expect this case to be the same in the future.

I must continue to insist that to insure that exhaust hoods are operating properly, there should be adequate supply of outdoor air into the room to replace air removed by the exhaust ventilation.


Donald S. Troup
Industrial Hygienist

DISTRIBUTION:

- 2 - F. Gardner, Contract Office, ACandS
- 1 - D. Dekowski, Alexander & Alexander
- 1 - Reading Eng. Dept.
- 1 - Baltimore Eng. Dept.
- 1 - H.O. National Accounts Dept.
- 1 - H.O. Eng. Dept., National Accts. Sect.

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ACandS, Inc.
COLUMBIA, MARYLAND

December 13, 1972

Air sample results for asbestos.

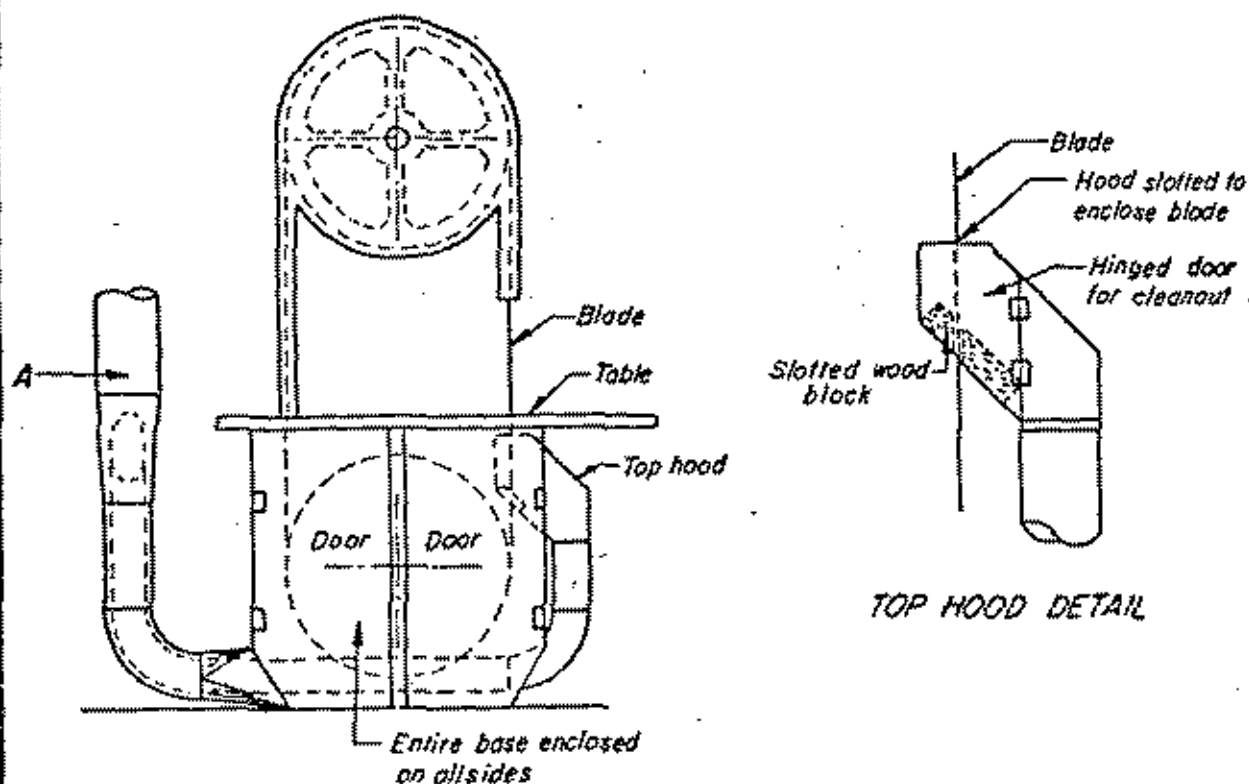
<u>Number</u>	<u>Location</u>	<u>Percent Asbestos</u>	<u>Results</u> (Fibers/cm ³ less than 5µ in Length)
1.	Fitting and Fabrication Shop, Operators' Breathing Zone.	15%	6.5
2.	Flange Pad Shop next to the Fitting and Fabrication Shop at the breathing height of the second operator.	15%	.5
3.	Warehouse area on the other side of the wall from the Fitting and Fabrication Shop near the Flange Pad Shop taken at the exhaust of the bag-type collector.	15%	.8

Results of the air sampling for the calcium silicate.

<u>Number</u>	<u>Location</u>	<u>Percent Calcium Silicate</u>	<u>Results</u>
4.	Fitting and Fabrication Shop, Operators' Breathing Zone.	85%	11.5 mppcf
5.	Flange Pad Shop next to the Fitting and Fabrication Shop at the breathing height of the Second Operator.	85%	.15 mppcf
6.	Warehouse area on the other side of the wall from the Fitting and Fabrication Shop near the Flange Pad Shop taken at the exhaust of the bag-type collector.	85%	1.8 mppcf

mppcf = million particles per cubic feet of air.
The TLV for asbestos is five fibers per cubic centimeter of air.
The TLV for calcium silicate is 30 mppcf.

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Blade width, inches	Exhaust volume, cfm		
	Bottom	Top	Total
Up to 2	350	350	700
over 2 to 3	350	550	900
over 3 to 4	550	800	1350
over 4 to 6	550	1100	1650
over 6 to 8	550	1400	1950

Duct velocity = 3500 fpm

Entry loss = 1.75 VP in duct riser (Point A)

AMERICAN CONFERENCE OF
GOVERNMENTAL INDUSTRIAL HYGIENISTS

BAND SAW

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