



DOW CHEMICAL U.S.A.

TEXAS DIVISION
FREEPORT, TEXAS 77541

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PLAINTIFF'S
EXHIBIT

DOW-173

ENVIRONMENTAL HEALTH REPORT

AIRBORNE ASBESTOS SURVEY
CELL SERVICES A-1003

FILE NO. A10-462

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CHECKED D. L. Daniel

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Summary

Survey for airborne asbestos was made in the A-1022 drawing vat area and the A-1023 dry storage area. Samples collected were all within the present limits established by the Occupational Safety and Health Act (OSHA), but some levels exceed the limits that become effective in 1976.

It is recommended that every effort be made to eliminate personnel exposure to asbestos fibers, and all areas be conditioned so levels do not exceed .0 fibers/cubic centimeter.

It is further recommended that each employee exposed to asbestos be apprised of all hazards, relevant symptoms and proper conditions and precautions concerning the use or exposure.

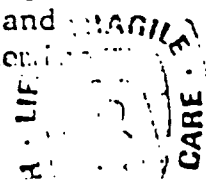
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INTRODUCTION

The Occupational Safety and Health Act (OSHA) requires that occupational exposure to airborne asbestos must be controlled so that no worker is exposed to more than 5.0 asbestos fibers per cubic centimeter of air based on a count of fibers greater than 5 micrometers in length. These are determined by a time-weighted average (TWA) exposure for an eight hour work day, and no peak concentration of asbestos more than 10.0 fibers per cubic centimeter as determined by a minimum sampling time of 15 minutes. This survey was made at Cell Services A-1022 and A-1023.

METHODOLOGY

The area was surveyed and eight stationary locations and two personnel, who were to handle asbestos, were selected for monitoring. Locations are shown in Figure 1 and 2 with the personnel monitors being worn while working on the walkway by P-3 and P-4 (Fig. 1).

Airborne samples were collected using the Micronair permissible air sampling pump (Bendix Environmental Science Division, Baltimore, Maryland). The asbestos was collected by pulling air through a Millipore filter (AAWG 04700). Flow rates for the pumps were calibrated at 2000 cubic centimeters per minute and the sampling times for the stationary pumps were fifteen minutes, while the personnel monitors were worn for thirty minutes.

All analysis were done by Lee Martin, B-1218, using the following procedure:

Four marked squares are cut from a filter about half way from the edge to the center. This section is then placed on a drop of clearing solution¹ and placed on a microscope slide. The sample is covered with a cover slip and allowed to clear (about 15 minutes). The sample count is made on a Reichert Zetopan optical microscope using Nomarski

¹ Clearing solution: 0.1 g/ml of clean Millipore filter paper in 1:1 diethyloxalate: dimethylphthalate.

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METHODOLOGY (continued)

interference contrast at 500 magnification. Counts are made for particles greater than 2.5 microns, fibers 5 microns to 10 microns, and fibers greater than 10 microns. The data is reported as total number of counts in each category per filter square.

RESULTS

The results of analyses are shown in Table I. All samples were below the Threshold Limit Values established by OSHA for asbestos. Area six (Fig. 2) was the highest. This was probably caused by some loose asbestos escaping from a torn bag.

The results of the personnel monitors shows the workmen are not being overly exposed to asbestos under these working conditions.

CONCLUSIONS

All samples collected were within the TLV limits.

RECOMMENDATIONS

1. Even though the levels are below the 5.0 fiber per cubic centimeter present standard, they are above the 2.0 fiber/cc limit that becomes effective in 1976. Therefore, every effort should be made to reduce these levels and eliminate as much personnel exposure as possible.
2. The bulk storage area should be used for asbestos storage only, and should be free of loose asbestos fibers.
3. The storage area should be cleaned by vacuum or by wet cleaning. (NO DRY SWEEPING SHOULD BE PERFORMED)
4. Asbestos waste and scrap should be collected and disposed of in sealed bags or other containers.
5. Each employee exposed to asbestos shall be apprised of all hazards, relevant symptoms and proper conditions and precautions concerning use or exposure.

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RECOMMENDATIONS (continued)

6. Medical surveillance is required on all personnel handling asbestos.

7. Monitoring of these areas should be repeated in six months and sooner if work procedures change or new equipment is installed.

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TABLE I

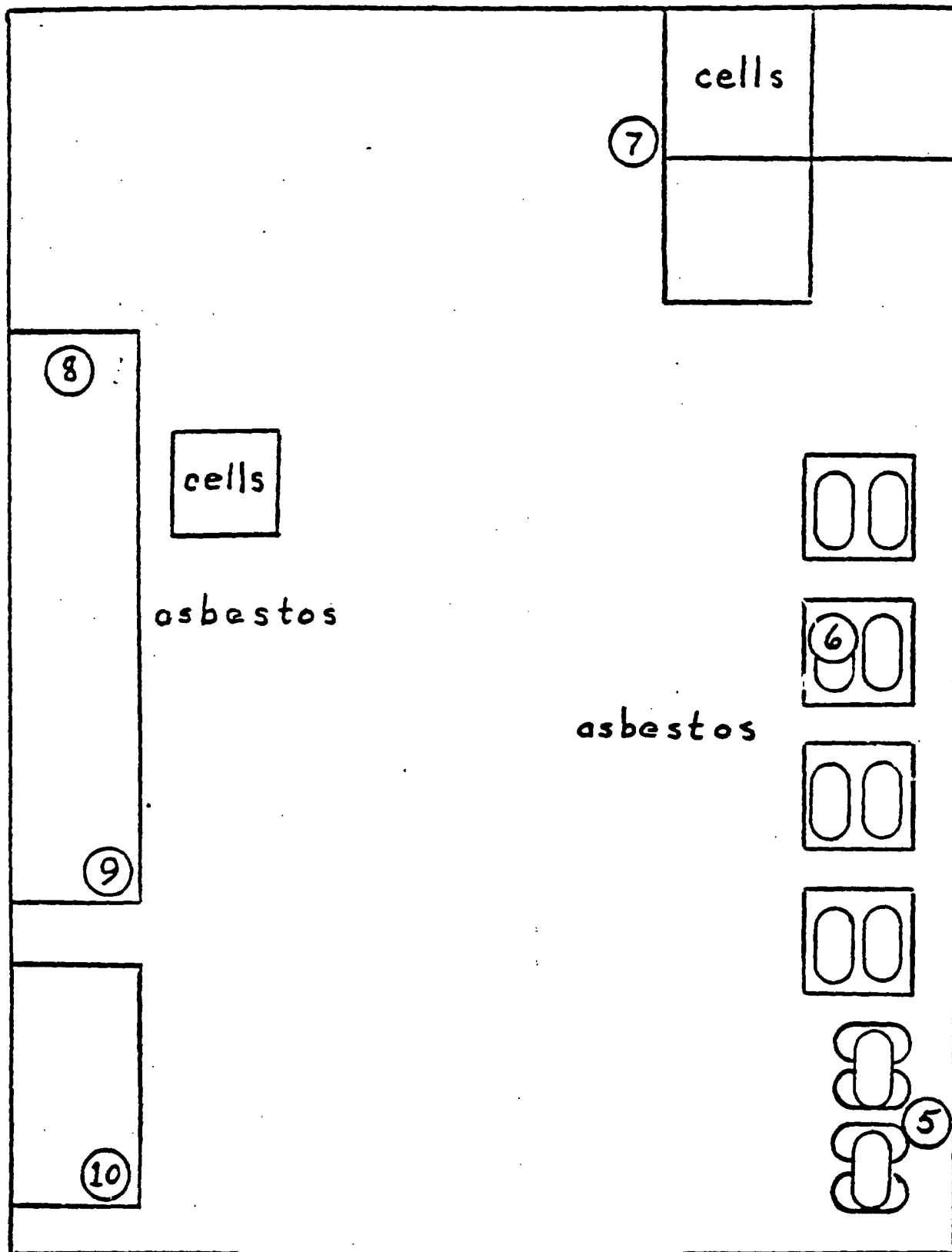
AIRBORNE ASBESTOS

FIBERS GREATER THAN 5.0 MICROMETERS
PER CUBIC CENTIMETER

<u>LOCATION</u>	<u>NO. OF FIBERS/CC</u>
1) Fig. 1 over asbestos on floor storage	2.9
2) Fig. 1 on wall behind drawing vat	1.8
3) Fig. 1* Personnel monitor walkway by asbestos	1.6
4) Fig. 1* Personnel monitor on inside walkway	1.1
5) Fig. 2 inside door to right in asbestos area	3.2
6) Fig. 2 right side of building asbestos storage	4.1
7) Fig. 2 on drying cells	1.5
8) Fig. 2 behind drying cell (storage area)	1.1
9) Fig. 2 behind asbestos storage	1.3
10) Fig. 2 on inside of door to left	0.9

* Monitor worn for 30 minutes while drawing cells.

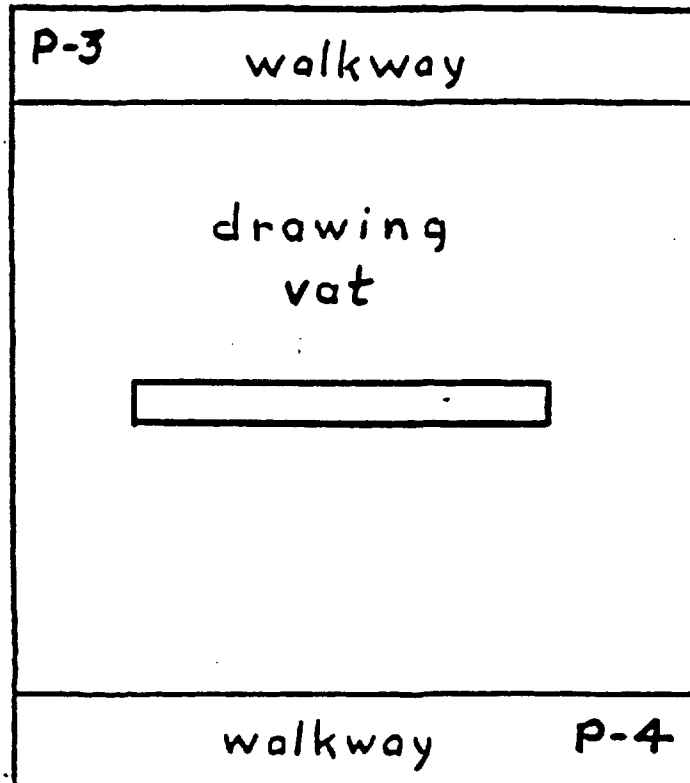
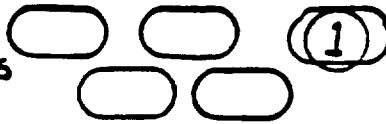
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A-1023
Fig. 2

asbestos



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