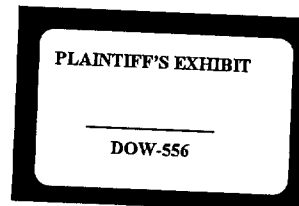




DOW CHEMICAL U.S.A.



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TEXAS DIVISION
FREEPORT, TEXAS 77541

ENVIRONMENTAL HEALTH REPORT

AIRBORNE ASBESTOS
CELL BAKING AREA
CHLORINE V, A-1324

FILE NO. A13-670

DATE June 23, 1975

AUTHOR H. N. Edwards

CHECKED R. L. Daniel

DATE June 24, 1975

Summary

Asbestos reached a level of 5.6 fibers/cc when the cell is being removed from the baking oven. The workman who removes this cell should wear an approved respirator when performing this task, even though he is probably not being over exposed for the total eight hour period.

Since this contributes to the overall asbestos within this area it is recommended that good housekeeping be practiced.

It is further recommended that the workmen in this area become part of the regular asbestos survey program.

Distribution

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D. R. Hart A-1324
C. B. Hill A-1324
O. F. Schumm B101
W. H. Fletcher B101
R. E. Flake B-101
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(2) H. R. Hoyle 1803 Bldg.-Midland
Marlene Swank 1803 Bldg.-Midland
* F. D. Axe - Pittsburg
* C. E. Caldwell - OCD
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* R. R. Langner 607 Bldg.-Midland
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INTRODUCTION

The Occupational Safety and Health Act (OSHA) requires that occupational exposure to airborne asbestos dust be controlled so that no worker is exposed to more than 5.0 asbestos fibers per cubic centimeters 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 concentrations 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 the Chlorine V Cell Baking area.

METHODOLOGY

The cell baking area is located in the cell repair building. After the cells have been prepared they are placed in the baking oven for 30 minutes, removed and cooled for 20-30 minutes. This process is repeated 4 to 6 times per day.

Three areas were selected for the monitors. Monitor number 1 was located approximately 10 feet from the cell door. Number 2 was directly over the oven door while monitor 3 was approximately 10 feet on the opposite side of the cell door from monitor 1. (Figure 1).

Three thirty-minute sampling periods were monitored. The first sampling period was while the cell was in the oven. The second as soon as the sample was removed and the third was when the second cell was removed.

Airborne asbestos samples were collected using the Micronair II permissible air sampling pump (Bendix Environmental Science Division, Baltimore, Maryland). The fibers were collected by pulling air through a Millipore filter (AAWG04700). Flow rates for the pumps were calibrated at 1000 cubic centimeters per minute and sample times were thirty-minutes.

All analyses were done by Sylvia Markham, B-1218, using the following procedure:

Four marked squares are cut from a filter about halfway from the edge to the center. This section is then placed on a drop of clearing solution¹ and placed over a microscope slide. The sample is covered with a cover

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METHODOLOGY (continued)

slip and allowed to clear (about 15 minutes). The sample count is made on a Reichert Zetopan optical microscope using Normarski interference contrast at 500 magnification. Counts are made for particles greater than 5 microns.

RESULTS

The results of analyses are shown in Table I. When the cell is removed from the oven the asbestos fibers increase near the cell and for up to ten feet in both directions.

CONCLUSIONS

The high asbestos levels near the cell after it is removed from the oven is increasing the overall asbestos levels within the cell service area.

RECOMMENDATIONS

1. It is recommended that the workman who removes the cell from the oven, wear an approved respirator.
2. The practice of good housekeeping is also recommended.
3. Workmen who spend time in this area should become part of the regular asbestos personnel survey.

¹ Clearing Solution: 0.1 g/ml of clean Millipore filter paper in 1:1 diethyloxalate: dimethyl phthalate.

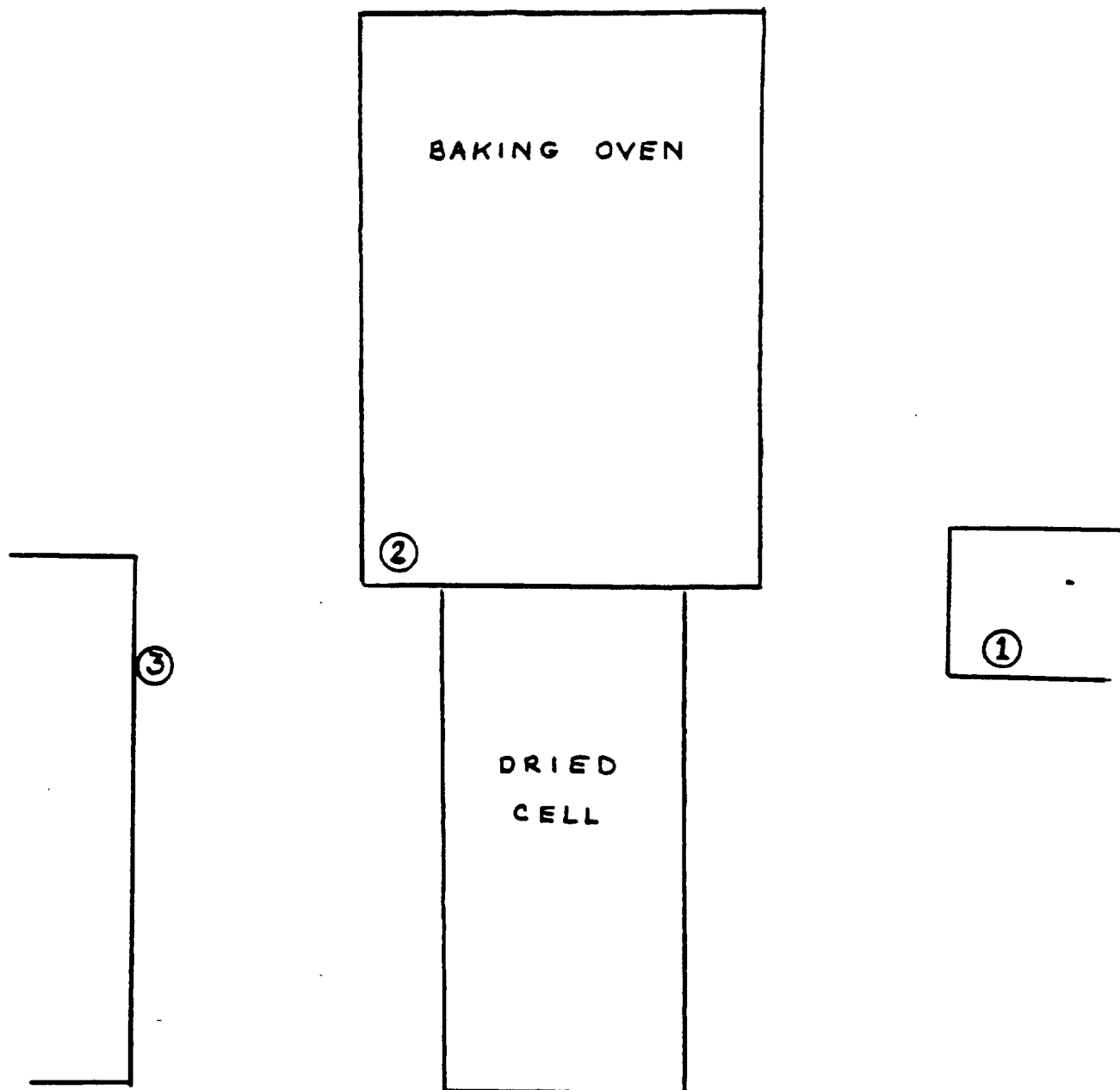
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TABLE I
AIRBORNE ASBESTOS
CELL BAKING AREA
CHLORINE V
May 13, 1975

LOCATION	FIBERS GREATER THAN 5 MICROMETERS/CC			
	30 MINUTE TIME PERIODS			
	DURING BAKING	1ST CELL REMOVED	2ND CELL REMOVED	
Figure 1 (1)	0.8	1.1	2.4	
(2)	1.1	5.1	5.6	
(3)	0.6	3.2	3.0	



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Fig.1- Cell Baking Area (Chlorine 5)