PLAINTIFF'S EXHIBIT

DOW-782

INDUSTRIAL HYGIENE REPORT
TEXAS OPERATIONS

DOW CHEMICAL U.S.A.
AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

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TITLE:
EVALUATION OF SHORT-TERM EXPOSURE TO ASBESTOS DURING INSULATION REMOVAL, B-5400 BLOCK

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SUMMARY

Coverers' and Apprentice Coverers' potential exposure to asbestos fibers during insulation removal was evaluated in November, 1987. The Coverer's potential calculated 8-hour time-weighted average exposure of 0.23 fibers/cc was marginally above the acceptable limit. The Apprentice Coverer's potential calculated exposure of 0.19 fibers/cc was slightly below the 0.2 fibers/cc level.

An area sample was taken downwind at the outer perimeter of the regulated area. The concentration of asbestos was 0.19 fibers/cc.

During the removal operation, the wind speed was approximately 20 to 25 MPH. The weather conditions and the inability to keep the insulation wet is believed to be the major cause for the high levels detected.

To minimize employee exposures to asbestos, the procedures outlined in the "Texas Operations Asbestos Handbook", should be followed at all times.

Coverers and Apprentice Coverers should be informed of the results of this survey. The informing should be documented in writing. The original copy of the documentation should be sent to Industrial Hygiene Services, B-101.

ST0015210

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EVALUATION OF SHORT-TERM EXPOSURE TO ASBESTOS DURING INSULATION REMOVAL, B-5400 BLOCK

INTRODUCTION

Asbestos monitoring was done during the removal of asbestos insulation on a valve and pipe in the B-5400 block. The work was done by Coverers from the B-106 Insulation Shop. The monitoring was done to assure that the use of approved job procedures would result in acceptable airborne asbestos concentration.

CONCLUSIONS AND RECOMMENDATIONS

Based on the limited monitoring data, the Coverer calculated 8-hour time-weighted average (TWA) exposure of 0.23 fibers/cc was marginally above the 0.2 fibers/cc acceptable limit. This was a potential exposure because the employee was wearing the proper protective equipment. The Apprentice Coverer, although doing the same job, calculated TWA exposure of 0.186 fibers/cc was slightly below the acceptable guideline.

The removal job was done on a day when the wind speed was approximately 20 to 25 MPH. A wind barrier was used, although it appeared not be very effective. An area sample was taken downwind of the job at the outer perimeter of the regulated area. The asbestos concentration was found to be 0.188 fibers/cc during monitoring.

Based on the employees calculated potential time-weighted average exposure to asbestos fibers, the following measures should be taken:

1. The removal of asbestos insulation under extreme weather condition (etc., high wind speed) should be postponed, unless adequate wind barriers can be constructed.

2. The insulation must be kept wet continuously during removal to minimize the release of airborne fibers.

3. All Coverers should be informed of the results of this survey and the informing documented.

RESULTS AND DISCUSSIONS

Table I shows the monitoring results for a short-term job done on 11-6-87 at B-5400 block. The highest concentration of asbestos found was 3.73 fibers/cc for a 30 minute job. This calculated to an 8-hour time-weighted average exposure of 0.23 fibers/cc.

Table II shows an area sample taken downwind at the outer perimeter of the regulated area. The concentration was found to be 0.19 fibers/cc.

The weather conditions and improper wetting procedures are believed to be the major contributing factors of the high levels found during the job.

EVALUATION OF SHORT-TERM EXPOSURE TO ASBESTOS DURING INSULATION REMOVAL, B-5400 BLOCK

METHODOLOGY

Asbestos samples were collected using calibrated Gilian HFS 513A and 113A air sampling pumps. A known volume of air was pulled through 25 mm cellulose ester membrane filters, 0.8 um pore size. Samples were collected at a flow rate of approximately 2 liters per minute. The samples were counted by McKee Environmental Health Services using NIOSH Method 7400.

EVALUATION CRITERIA

The evaluation exposure level was based on the following criterion:

	OSHA PEL
Asbestos	0.2 fiber/cc

The OSHA Permissible Exposure Limits (PEL) is the time-weighted average concentration for a normal 8-hour workday, 40 hour work week, to which nearly all workers may be repeatedly exposed without adverse health effects.

TABLE I

SUMMARY OF INDIVIDUAL POTENTIAL SHORT-TERM EXPOSURES TO ASBESTOS INSULATION DURING REMOVAL

Job Classification	Master Number	Sample Number	Date	Sampling Time(Min)	Concentration Fibers/cc
Coverer	135817	A-ISB-1	11-6-87	30	3.73
				8-Hour TWA	0.23
Apprentice Coverer	142947	A-ISB-2	11-6-87	30	2.98
				8-Hour TWA	0.186
	Industrial Hygiene Guide			8-Hour TWA	0.2

TABLE II

AREA SAMPLE
POTENTIAL SHORT-TERM EXPOSURES TO ASBESTOS INSULATION DURING REMOVAL

Sample Number	Sample Description	Date	Sampling Time(Min)	Concentration Fibers/cc
A-ISB-3	Area sample taken downwind at the outer perimeter of the regulated area.	11-6-87	38	0.188