



DOW CHEMICAL U.S.A.

PLAINTIFF'S EXHIBIT

DOW-776

TEXAS DIVISION  
FREEPORT, TEXAS 77541

CONFIDENTIAL-----FOR USE OF DOW EMPLOYEES ONLY

ENVIRONMENTAL HEALTH REPORT

EVALUATION OF ASBESTOS EXPOSURES  
DURING PIPE INSULATION REMOVAL  
B-1900

FILE NO. B19-2393

DATE March 1, 1983

AUTHOR R. A. Dommer

CHECKED R. L. Daniel

DATE March 1, 1983

Summary

Industrial Hygiene monitoring was performed on February 7 and 8, 1983 to evaluate potential asbestos exposures to contractor personnel (Ultimate Insulators, Inc.) during removal of pipe insulation in the B-1900 block. The results of personnel monitoring show potential exposure levels were within the OSHA guideline of 2 fibers/cc. Incidental exposures to other block personnel were judged to be insignificant.

ST0015160

bbs  
Distribution

J. M. Carroll, B-7501  
R. L. Delnay, B-1901  
J. W. Oldner, B-1901  
File

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\* R. M. Croyle, 322 Bldg.-Michigan  
\* F. H. Braunlich-Tulsa

AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

### INTRODUCTION

Industrial hygiene monitoring was performed to evaluate potential exposures to asbestos for contractor personnel during insulation removal in the B-1900 block. The monitoring was conducted by J. M. Carroll on February 7 and 8, 1983.

### METHODOLOGY

Air samples were collected using Bendix BDX-44 air sampling pumps to pull air through open face 0.8 u Millipore filters. The air sampling rate for each sample was determined before and after sampling using a calibrated rotameter (Gilmont S/N B3975). Asbestos fibers present in the sampled air were trapped on the filters which were analyzed by Analytical Services using optical microscopy (File #3563).

### DISCUSSION OF RESULTS

The results of the monitoring are presented in Table 1. Also listed on the table is the Exposure Guideline of 2.0 fibers greater than 5 microns in length per cubic centimeter of air. Repeated exposures to asbestos dust at average concentrations less than the exposure guideline should not result in a significant increase in the risk of asbestos related injury. This guideline is the current OSHA permissible exposure level for asbestos.

The personnel monitoring results for the two contractors who performed most of the insulation removal are within the exposure guideline. As a precaution, respiratory protection (3M Dust Respirator Model 8710) was worn by all personnel who performed the insulation removal. Because of the respiratory protection, actual exposures were less than the measured potential exposure levels shown in Table 1.

In addition, while initial recommendations did not include the use of disposable paper coveralls, they were used after February 8 when removing friable insulation. This was based on observations of the job that indicated the potential for contamination was higher than anticipated due to the condition of the insulation.

An area sample collected 15 to 20 feet downwind of the job on February 8 (wind from the South at about 10 mph) showed an average concentration of asbestos of 0.06 fiber/cc. This indicates that incidental potential exposures to other B-1900 block personnel who occasionally walked by the roped off area, were well with acceptable exposure guidelines.

ST0015161

March 1, 1983

RECOMMENDATIONS

The results of this monitoring should be provided to the contractor supervision (Ultimate Insulators, Inc.) and it should be recommended that they inform the personnel who were monitored, of the results.

ST0015162

RAD/bbs

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RESULTS OF ASBESTOS MONITORING  
B-1900 INSULATION REMOVAL

| SAMPLE DESCRIPTION |                                                                                  | ASBESTOS<br># FIBERS > 5 $\mu$ /CC |
|--------------------|----------------------------------------------------------------------------------|------------------------------------|
| G. Lopez           | S.S. #536-647-7057<br>Worked underneath pipe<br>10:00 a.m. - 3:15 p.m.<br>2-7-83 | 0.53                               |
| DeLaFuentes        | S. S. #518-562-2396<br>Worked above pipe;<br>10:00 a.m - 3:15 p.m.<br>2-7-83     | 0.11                               |
| G. Lopez           | S. S. #536-647-7057<br>In pipe rack; 8:20 a.m.-<br>2:40 p.m.; 2-8-83             | 0.72                               |
| DeLaFuentes        | S. S. #518-562-2396<br>In pipe rack; 8:20 a.m.-<br>2:40 p.m.; 2-8-82             | (0.5)*                             |
|                    | Area sample 15-20 feet<br>downwind of work, 2/8/83;<br>8:20 a.m.-2:40 p.m.       | 0.06                               |
|                    | Exposure Guideline 8 Hr. TWA                                                     | 2.0                                |

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\* Sampling pump was not running properly when picked up. This value is estimated and may not be accurate.

Note: Personnel involved in insulation removal wore approved respiratory protection. The values reported here represent potential exposures without regard to protective equipment.

bbs

Support Car

File B19-2393

For: R.A. Sommer

CHARGE: 6915-

SUBJECT: Air Monitors

Date: 2/25/83

File #: 3563

By: B.H. Lewis

| Sample Description | # of Fibers Counted                 | # of Passes               |               |                 |
|--------------------|-------------------------------------|---------------------------|---------------|-----------------|
|                    |                                     | 12 passes/sq.             | 12 passes/sq. | _____           |
|                    |                                     |                           | 360 A/pass    | _____           |
| #1                 | 184                                 | 1/pass                    |               | _____           |
| #2                 | 114                                 | 4                         |               |                 |
| #3                 | 315                                 | 1                         |               |                 |
| #4                 | 163                                 | 1                         |               |                 |
| #5 Area            | 121                                 | 4                         |               |                 |
| Blank              | 5                                   | 12                        |               |                 |
|                    |                                     | Total Fibers<br>in Sample | hair          | <u>fibers/L</u> |
| #1                 | $((184 \times 12) - 5) 88 = 194000$ |                           | 365           | 0.53            |
| #2                 | $((114 \times 3) - 5) 88 = 29700$   |                           | 261           | 0.11            |
| #3                 | $((315 \times 12) - 5) 88 = 332000$ |                           | 464           | 0.72            |
| #4                 | $((163 \times 12) - 5) 88 = 172000$ |                           | ~340*         | ~0.5            |
| #5                 | $((121 \times 3) - 5) 88 = 31504$   |                           | 555           | 0.06            |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |
|                    |                                     |                           |               |                 |

\* dump problem.

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|                             |  |                       |  |                                   |  |                  |  |
|-----------------------------|--|-----------------------|--|-----------------------------------|--|------------------|--|
| FILE NUMBER                 |  | PROCESS               |  | BLDG. NO.                         |  | DATE             |  |
|                             |  |                       |  | B-1900 AREA                       |  | 2-7-83           |  |
| MATERIAL                    |  | SAMPLING METHOD       |  | TRAPPING MEDIUM                   |  |                  |  |
| Asbestos                    |  | Pump, filter cassette |  | Filter cassette                   |  |                  |  |
| EQUIPMENT NUMBER            |  | TYPE OF EQUIPMENT     |  | FLOW INDICATOR SETTING            |  | SAMPLE FLOW RATE |  |
| 1 + 7                       |  | BENDIX                |  | #1 55 NTH                         |  | OUTSIDE TEMP.    |  |
| REMARKS (VENTILATION, ETC.) |  |                       |  | 37 H5 NTH                         |  | 20°C             |  |
|                             |  |                       |  | OUTSIDE 15' HIGH WIND NW 5-15 MPH |  |                  |  |

Rotameter S/N B-3975

ST0015165

# INDUSTRIAL HYGIENE SAMPLE RECORD

|                             |                                      |                        |                  |
|-----------------------------|--------------------------------------|------------------------|------------------|
| FILE NUMBER                 | PROCESS                              | BLDG. NO.              | DATE             |
|                             |                                      | B1900                  | 2-8-83           |
| MATERIAL                    | SAMPLING METHOD                      | TRAPPING MEDIUM        |                  |
| Asbestos                    | Pump/diff/cassette                   | Filter Cassette        |                  |
| EQUIPMENT NUMBER            | TYPE OF EQUIPMENT                    | FLOW INDICATOR SETTING | SAMPLE FLOW RATE |
| 1-7                         |                                      | #1 45 RTM              |                  |
|                             |                                      | #2 45 "                |                  |
|                             |                                      | #3 80 "                |                  |
| REMARKS (VENTILATION, ETC.) | OUTSIDE 15' high Wind 7-12 MPH SOUTH |                        |                  |
|                             | OUTSIDE TEMP. 60°C                   |                        |                  |
|                             | INSIDE TEMP.                         |                        |                  |

| SAMPLE No. | DESCRIPTION OF SAMPLE                     | TIME            |                 | PUMP STROKES |                |
|------------|-------------------------------------------|-----------------|-----------------|--------------|----------------|
|            |                                           | Start           | End             | Start        | End            |
| 3          | WISC G. LOPEZ                             | 8 <sup>20</sup> | 24 <sup>0</sup> | 45 RTM       | 55 RTM         |
| ump 1      | SS 536647057                              |                 |                 | 45880        | 51300          |
|            | 380 min @ avg rate 1.22 l/min =           |                 |                 | 464 l        |                |
|            | 0.72 fibers/cc                            |                 |                 |              |                |
| 4          | De La Fuente                              | 8 <sup>20</sup> | 24 <sup>0</sup> | 45 RTM       | ALMOST STOPPED |
| ump 7      | SS 578562396                              |                 |                 | 14574        | 23509          |
|            | ~38 cc/ltr estimated from sample #2 data  |                 |                 |              |                |
|            | ~340 l                                    |                 |                 |              |                |
|            | ~0.50 fibers/cc                           |                 |                 |              |                |
| 5          | Area 37' NORTH AT GRATING NEAR            | 8 <sup>20</sup> | 24 <sup>0</sup> | 80 RTM       | 60 RTM         |
| ump F      | WEST END C. DEMOLITION (15-20' from work) |                 |                 | 58686        | 68322          |
|            | Wind S @ 7-12 MPH                         |                 |                 |              |                |
|            | 380 min @ avg rate 1.46 l/min =           |                 |                 | 555 l        |                |
|            | 0.06 fibers/cc                            |                 |                 |              |                |

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