BCC: R. E. Byrne, Jr.
B. L. Ingalls
J. L. Myers
T. P. Norris
G. J. Spencer
W. C. Thurber
File

Fibrex ASBESTOS
UNION CARBIDE CORPORATION · METALS DIVISION · P. O. BOX 579 · NIAGARA FALLS, N.Y. 14302 · TEL: 716-278-3376

PLAINTIFF'S EXHIBIT
UC-2208

April 12, 1977

J-3

Mr. Paul Tillisch
Vice-President, Research & Development
Textured Coatings of America, Inc.
5950 S. Avalon Blvd.
Los Angeles, CA 90003

Dear Paul:

A copy of the dust count report and the cover letter to John Hinton that we discussed is attached for your information. As agreed, these were not sent to Mr. Hinton although I did tell him by phone, the general nature of the results.

Since the State already has their own data which they are using as a basis for action, I don't see how this report can do any harm. It does imply that due to method limitations the actual levels could be considerably lower than either of the results. It also seems important to me that we maintain our creditibility as a responsible, professional organization.

If you have any further comments, please let me know.

Very truly yours,

H. B. Rhodes/dal

Harrison B. Rhodes
Technology Manager

HBR:dal
Attachment

UCC 004129

Unicarb ASBESTOS
UNION CARBIDE CORPORATION · METALS DIVISION · P. O. BOX 579 · NIAGARA FALLS, N.Y. 14302 · TEL: 716-278-3376

April 1, 1977

Mr. John Hinton
Occupational Health Branch
Department of Health
1449 W. Temple Street
Los Angeles, CA 90026

Dear John:

Our report of the dust counts of the samples we collected together at the Valley Grove Trailer Park is attached. As we discussed, the samples appeared to contain a lot of material that may or may not be chrysotile and we intended to try to check this out with the electron microprobe. Unfortunately, with the small particles that had to be identified, we ran into a problem of beam damage to the filter that often caused the particles to sink into it before a satisfactory identification could be made. We have made good progress with an alternative SEM technique but it will be at least several more months before it has been sufficiently tested to use. Accordingly, I have completed the report based only on phase contrast microscopy. I think it is pretty much self explanatory.

We recently received a copy of the Cal/OSHA results for the samples that were collected simultaneously. The times were not shown in the report, but I think I have correctly matched our data as shown by the numbers in parenthesis. The results range from about the same to about half of the values found by Cal/OSHA. Considering the overloaded condition of many of the filters and the other counting problems discussed in the report. It is my opinion that the differences are well within the limitations of the method.

I am sorry we took so long to respond, but it seemed important to try to obtain more detailed information. Union Carbide wishes to thank you for the cooperation received during the testing and to compliment you on the highly professional conduct of your staff. It was a pleasure working with you. If you have any questions or would like to discuss the results further, please do not hesitate to let me know.

Very truly yours,

Harrison B. Rhodes
Technology Manager

HBR:dal
Attachment

UCC 004130

LOCATION 3 Village Grove Park (Lots 19 and 20), Corona

	Sandblaster	Mixer-Hosetender	Area
			UCC (0.1) 0.3 (Stationary Background) Upwind
			Before Blasting (0.1) 0.2 (Moving Background)
Fibers/cc			(0.0) 0.1 (Stationary Background) Upwind*
	UCC	UCC	
5 Microns	(1.7) 1.6 (Filter outside of hood)	(1.0) 1.4	(0.1) 0.1 (Moving during blasting) Never downwind
	(3.2) 7.1 "		
	(3.3) 6.6 "	(1.1) 2.2 (Upwind)	(<0.1) 0.2 " " "
	(1.7) 3.7 (Filter inside of Hood)	(0.2) 0.5 "	" " "
	(1.8) 2.1 (Filter outside of Hood)	(0.1) 0.2 "	(0.8) 1.9 (Stationary during blasting) Downwind

Material - 1% Chrysotile
Epoxy base?

Within 20 to 40 feet of sour

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AIRBORNE ASBESTOS COUNTS

for

Textured Coatings of America, Inc.
(Village Grove Trailer Park, Lots 19 and 20)
Corona, California

Date Sampled: December 17, 1976
Date Reported: April 1, 1977

Samples Collected By: B. L. Ingalls
Union Carbide Corporation

Samples Analyzed By: B. L. Ingalls & G. J. Spencer
Union Carbide Corporation

Reported By: H. B. Rhodes
Union Carbide Corporation

Union Carbide Corporation
Metals Division
Niagara Falls, New York

UCC 004132

OBJECTIVE

To measure the airborne asbestos fiber concentrations generated during the removal of an asbestos-containing maintenance coating from a sheet metal fence by sand-blasting.

DESCRIPTION OF OPERATION

The test was run at Village Grove Trailer Park, Lots 19 and 20 in Corona, California. The park was surrounded by a galvanized metal fence about 5' high that had been painted about five years previously. The metal was first primed and then painted with an alkyd-based maintenance coating containing about 5% asbestos. The paint also contained mica, talc (non-tremolitic), fiberglass, and perlite.

The sandblasting was done with a portable unit consisting of a compressor and a blasting unit. The latter had a sand storage tank about 1' in diameter by 3 1/2' long which fed silica sand through a lever operated control device and a heavy hose to a blast nozzle, under the control of the operator. One man handled the blasting nozzle while the other operated the compressor, assisted with the hoses, but primarily operated a lever on the sand delivery unit to keep the sand flowing. The nozzle operator wore a conventional sand-blasting hood with air openings on the sides.

During the blasting operation one man stood about 2' from the fence and moved the nozzle, held about 3-6 inches from the fence, in short arcs until the impinging sand removed the paint down to the base metal. Bonding was excellent and it took at least several passes of the blast to remove the paint. The material removed was finely pulverized. The bottom 1 1/2' of the fence was not hand-blasted to avoid raising extraneous dust from the dry ground at the base of the fence. The weather was clear and warm with a light, variable breeze blowing from left to right in approximately the same direction as the fence.

SAMPLE COLLECTION

The following types of samples were collected during the test:

1. Background samples prior to testing were collected at the fence, ~4 1/2' from the ground about 100' apart. (Spanned the section to be sand-blasted.) (G-16 & F-44)

2. A sample about 40' downwind, on the fence about 5' above the ground, during the last 25 minutes of sand-blasting.(G-3)

3. Personal samples on an observer in an area generally 25-35' from the blasting operation and approximately perpendicular to the blasting. (A-86, A-81, J-89)

4. Personal samples on both the helper and the sand-blasting operator. All operator samples were external to the hood except X-2.

   Helper - G-48, X-8, C-15, X-4
   Operator - D-71, X-14, G-34, X-2, X-3

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COUNTING EQUIPMENT AND PROCEDURES

All samples were collected with battery-powered air pumps (M.S.A.), calibrated to 2 liters per minute on Millipore membrane filters of 0.8μ porosity. The samples were mounted and counted in accordance with the procedure of Bayer, Zumwalde, and Brown (Bureau of Occupational Safety and Health, February 1969). Counting was done with a Nikon microscope at 400X utilizing a Poton reticle with a 0.0062 mm^2 field area. One hundred fields were counted for all samples.

These samples proved to be particularly difficult to count. Out of the total of nine personal samples from the blast operator and the helper, six were loaded with dust to a level where filter areas were frequently obscured. When such an area occurred, the counter went on to another field. There is no way to tell how this may have influenced the results. Our normal practice in this situation is to resample, but considering the difficulties this would entail, the filters were used.

In addition to this problem, the nature of the samples puts an extreme strain on the method. Thus:

1. Fiber concentrations were low with 0.58 fibers/field the maximum and 0.2 fibers/field more or less typical. This is well below the 1-5 fibers/field range recommended by NIOSH.

2. The fibers counted were in the 5-15μ range so that the "5μ decision" was a frequent requirement.

3. There were substantial concentrations of mica "chips" present. These can generally be recognized as not asbestos but certain shapes around 5μ in length can become undistinguishable.

These factors of low fiber concentration on the filter, filter size distribution, and potentially interfering "fibers" result in a high degree of operator discretion in the determination of the total number of asbestos fibers counted. When this possible variation is combined with the short sample times substantial variations can result.

In view of these uncertainties, a modification was made in the procedure to report two categories of fiber:

1. Obvious chrysotile asbestos. Either long and curved, or distinctly thin and slightly curved in the 10-20μ range.

2. Probable asbestos fiber: Particles which did not have obvious identifying asbestos features but met the L/D >3, >5μ requirements and were dark and fiberlike under phase-contrast illumination.

   When there was any doubt about a fiber's identity it was included in category 2. Particles which were obviously not asbestos were not included. The total of 1 and 2 would be the value ordinarily reported as asbestos.

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RESULTS AND DISCUSSION

A description of each sample and the respective fiber concentrations are shown in Table I. The data obtained by counter A are presented graphically in Figure I. Where paired results are available Counter B was high six times and Counter A three times. The differences, without regard to sign ranged from 0.1 to 1.1 fibers/cc and averaged 0.3 fibers/cc. In view of the counting difficulties on these slides we consider this to be good agreement for operators in the same laboratory counting the same slides.

The operation of the sand-blasting equipment was too erratic to provide a meaningful estimate of operator TWA exposure for regular full day operation. Using just the time periods during the actual blasting operations, the time-weighted averages would be:

$$\text{Operator} - \frac{(10)\ (2.2) + (11)\ (3.2) + (8)\ (3.28) + (14)\ (1.68) + (22)\ (1.76)}{10 + 11 + (8) + (14) + 22} = 1.7$$

$$\text{Helper} - \frac{(10)\ (1.03) + (23)\ (1.1) + (14)\ (0.15) + (22)\ (0.06)}{(10) + (23) + (14) + (22)} = 0.8$$

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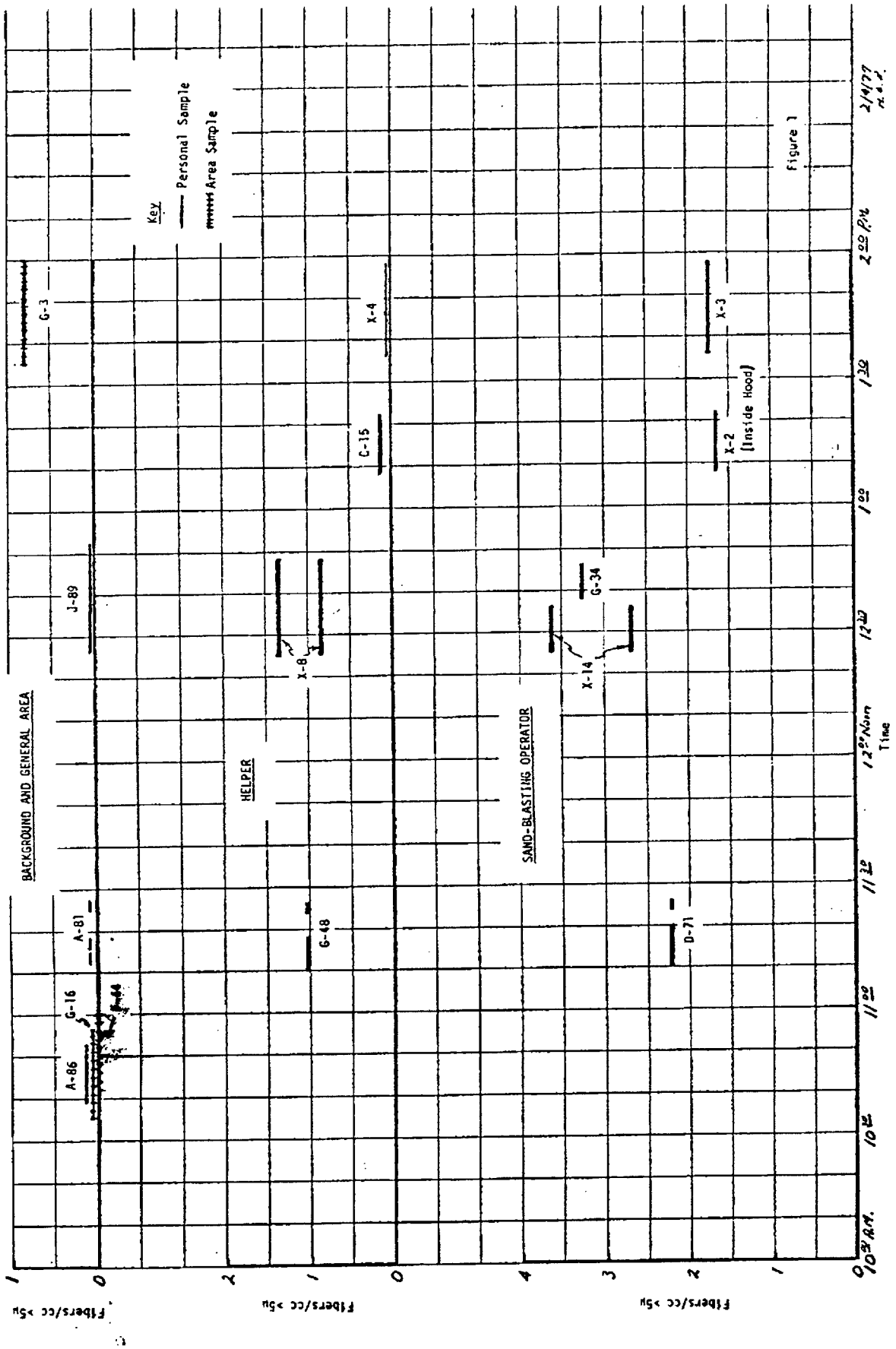
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TABLE I

SUMMARY OF AIRBORNE ASBESTOS FIBER COUNTS DURING
SAND-BLASTING OF ASBESTOS-CONTAINING MAINTENANCE COATING

Description of Operation	Sample Data time No.	On	Off	Total Min.	Airborne Fiber Concentrations (Fibers/cc >5μ) Operator "A" Obvious Chrysotile fibers 100 fields	f/cc	Probable Asbestos fibers 100 fields	f/cc	Total Asbestos fibers 100 fields	f/cc	Operator "B" Total Asbestos fibers 100 fields	f/cc	Comments
Pretest Controls													
On fence, left side of area to be sand-blasted. ~4 1/2' above ground.	G-16	10:35	10:56	21	0	0	2	0.07	2	0.07	-	-	
On fence, ~100' from G-16. ~5' above ground.	F-44	10:42	10:59	17	0	0	0	0	0	0	2	0.08	
Personal sample on observer ~25' from fence and moving parallel to fence.	A-86	10:39	10:52	13	0	0	2	0.11	2	0.11	4	0.21	
Observer (During Sand-Blasting)													
Personal sample on observer ~20-30' from fence and moving parallel to fence.	A-81	11:12 11:25	11:18 11:27	6 2 8	0	0	1	0.09	1	0.09	-	-	
Same as A-81.	J-89	12:26	12:52	26	0	0	1	0.03	1	0.03	-	-	
Area sample on fence. 5' above ground and ~40' downwind. (In lieu of observer)	G-3	1:35	2:00	25	7	0.19	22	0.61	29	0.8	21	0.6	
Helper (During Sand-Blasting)													
Personal sample. Assisting with hoses. Operating sand feeding equipment.	G-48	11:10 11:24	11:18 11:26	8 2 10	1	0.07	14	0.97	15	1.03	9	0.6	
Same as G-48.	X-8	12:25	12:48	23	10 -	0.30 -	18 -	0.54 -	28 45	0.84 1.35	60	1.8	Heavily loaded; hard to count second slide
Same as G-48.	C-15	1:08	1:22	14	1	0.05	2	0.10	3	0.15	-	-	
Same as G-48.	X-4	1:36	1:58	22	0	0	2	0.06	2	0.06	9	0.3	
Blasting Operator (During Sand-Blasting)													
Personal sample. Operator handling sand-blasting nozzle, standing ~2' from fence.	D-71	11:10 11:24	11:18 11:26	8 2	7	0.48	25	1.72	32	2.21	-	-	Heavily loaded, hard to count.
Same as D-71.	X-14	12:25	12:36	11	13 -	0.82 -	30 -	1.88 -	43 58	2.70 3.64	- 75	- 4.70	Heavily loaded; hard to count second slide
Same as D-71.	G-34	12:38	12:46	8	5	0.43	33	2.84	38	3.28	39	3.36	Heavily loaded; hard to count.
Same as D-71 except inside of hood.	X-2	1:08	1:22	14	8	0.39	26	1.28	34	1.68	-	-	" "
Same as D-71.	X-3	1:36	1:58	22	21	0.66	35	1.10	56	1.76	53	1.66	" "

AIRBORNE ASBESTOS FIBER COUNTS DURING SANDBLASTING
OF ASBESTOS-CONTAINING MAINTENANCE COATING



UCC 004137