PLAINTIFF'S EXHIBIT

UC-2629

Mr. K. W. Lentz (attachment) March 24, 1964
Union Carbide Corporation
Nuclear Division
King City, California

Mr. C. E. Brown
Mr. L. B. Mallot
Mr. D. S. Kamens (attachment)
Dr. C. U. Dernehl

Dear Mr. Lentz:

The results of the dust determinations made at King City, March 10-13, 1964 are given in the accompanying table. Included also in the table is information defining sampling conditions. I suggest that these results along with those obtained last fall be considered as the beginning of a permanent record of dust determinations made in our asbestos operations.

Owing to curtailment in operations and the need to evaluate counting techniques that could be used at King City, we did not collect as many samples as we would expect to get under other conditions. However, I believe those that we did get give a fair appraisal of the present work environment.

You will note that on two days samples were collected during periods of bagging open fiber. Other production machinery was generally down during these occasions.

Samples collected on the third day reflect condition during which much of the equipment except the bagger was in operation. These variations in conditions are noted in the table of findings.

Generally the dust counts were less than the limit of 5 million particles per cubic foot of air (MPPCF) recommended for asbestos. Those that were higher were as follows:

1. One sample collected at the discharge of the bag conveyer (during bagging) showed 11.5 MPPCF. It is difficult to explain this finding, but it may have been caused by puffs of dust from the filler tub on the bags as they were compressed along the incline portion of the conveyer. The dust from this source is not noticeably affected by the exhaust hood at the bagger so that with repeated loss, and appropriate air movement, concentrations could build at the conveyer discharge. However, the average for all

Union Carbide trial exhibit UC-2629: Paul B. McDonie to K. W. Lentz on March 1964 King City Asbestos Dust Deter… Published by AsbestosClaims.Law
ACL Doc 17578 · Page 1 of 5 asbestosclaims.law/library/17578/1

samples collected at this point was less than 5.0 MPPCF so it was concluded that while the dust potential should not be ignored, the exposure of personnel was not critical.

2. One sample collected in a box car during unloading of returned material also exceeded 5.0 MPPCF but this reflected a period when torn bags were encountered and manual handling was necessary. Another sample collected when only the lift truck was used, showed considerably less dust. During work in this car on all occasions respirators were worn.

3. Two samples collected on the raised platform at the transfer point for the filter cake conveyor showed concentrations of dust above the limit. Since the sampling position was within 30-40 feet of the dryer exhaust stack and since the door to the outside of the building at this point was open, it is possible that the result reflected the effect of in-drafts moving across the stack and into the door. This position, of course, is not a point of continuous exposure of personnel; however, I believe it wise that it be routinely checked to see if the condition is of significant duration.

During this visit it was noted that respirators are worn by personnel any time work is performed in visible dust. This is a wise procedure that should be continued.

The procedures for dust sample collection and counting were discussed with Mr. Kamens. The main points covered are further discussed in detail in the attached copies of dust evaluation procedures proposed by the U. S. Public Health Service. One copy of the procedure should be filed with the record of findings.

The question of use of isopropyl alcohol or distilled water in sample collection was studied at length. The alcohol allows faster particle settlement in counting cells and therefore less time is required. On the other hand, the particles are not so easy to see in alcohol as in water so that counting, which is difficult at best owing to the small size of the dust particles, is done with more ease if water is the collection medium. While I think either liquid or a mixture of the two is acceptable, I believe water will be most satisfactory unless samples must be held more than 24 hours. The minimum times that I recommend for settlement

Union Carbide trial exhibit UC-2629: Paul B. McDonie to K. W. Lentz on March 1964 King City Asbestos Dust Deter... Published by AsbestosClaims.Law
ACL Doc 17578 · Page 2 of 5 asbestosclaims.law/library/17578/2

of particles in the liquids in the counting cells are: water, 50 minutes and alcohol, 40 minutes. In the use of either liquid, cleanliness of glassware is critical, because the allowable number of particles is small.

Initially, locations for routine sample collection should be those shown in the table of results. As mill operations become more steady, changes or additions in locations may be indicated. Plans should also include periodic investigations at the mine.

The frequency that samples should be collected will be affected by the level of activity. For steady operation and continued production, I recommend that samples be collected on a monthly basis. In time, if dust control is adequate, the frequency may be reduced. When changes are made in operations in which dust may be of concern, then the effect of the changes should be evaluated by more frequent sample collection. An exact program cannot be established until operations are more stabilized.

Mr. Kamens and I discussed the glassware (impingers and counting cells) needed for a satisfactory dust evaluation program. We are still conducting tests on battery-powered sampling equipment and until these are completed, I believe it wise to withhold purchase of any sample collection apparatus. I'll send you our findings and recommendation as soon as possible.

Please let me know if you have questions on findings to date or if you note potential exposure to dust that implies a need for further study. According to my present travel plans, I will be in California again in the summer to visit King City and other Corporation installations. At that time, we can review our program.

Yours very truly,

Paul W. McDaniel

Paul W. McDaniel
Industrial Hygiene Engineer

PWM/en

Union Carbide trial exhibit UC-2629: Paul B. McDonie to K. W. Lentz on March 1964 King City Asbestos Dust Deter... Published by AsbestosClaims.Law
ACL Doc 17578 · Page 3 of 5 asbestosclaims.law/library/17578/3

Union Carbide trial exhibit UC-2629: Paul B. McDonie to K. W. Lentz on March 1964 King City Asbestos Dust Deter...
ACL Doc 17578 · Page 4 of 5

DUST CONCENTRATIONS
UNION CARBIDE CORPORATION
NUCLEAR DIVISION
King City, California
March 10-13, 1964

LOCATION AND OPERATION	DATE	MPPCF(1)	REMARKS
Alongside bagger operator during bagging of open fiber	3/10/64	2.7 3.0 2.2	Boxcar of bagged product being unloaded by lift truck and bags hauled by sampling location. No other production machinery in operation. Occasional loss of material from bags on conveyor. Respirator worn by bagger operator. Doors open.
Same position and operation	3/11/64	3.6 4.4 3.7	Same operations, but dryer and filter coke conveyor also operating. Other conditions same.
Area around discharge of bag conveyor during bagging	3/10/64	1.5 2.4 2.0	Same conditions as at bagger (3/10/64)
Same position and operation	3/11/64	4.3 4.1 11.5	Same conditions as at bagger (3/11/64)
Inside boxcar during unloading of bags of asbestos pellets with fork lift.	3/10/64	1.8	Little visible dust and very little disturbance of bags. Respirator worn by lift operator.
Same location but manual assistance given fork lift	3/11/64	10.8	Visible dust. Some torn bags. Respirators worn by all personnel involved.
General floor area and aisleways at end of day	3/10/64	1.8	Some floor sweeping in progress.
Same location	3/11/64	2.2	Same as above.
Platform at Coe Bin feeder. Feeder operating.	3/12/64	3.4 4.3	Other equipment except bagger operating.

UCC 004959

Published by AsbestosClaims.Law
asbestosclaims.law/library/17578/4

DUST CONCENTRATIONS
UNION CARBIDE CORPORATION
NUCLEAR DIVISION
King City, California
March 10-13, 1964

LOCATION AND OPERATION	DATE	MPPCF(1)	REMARKS
Walkways around shaker tables	3/12/64	2.3 2.6	Other equipment except bagger operating.
Platform around deck filter	3/12/64	2.6 2.0	Same as above.
Platform around plate filters	3/12/64	3.2 2.8	Same as above.
Closed platform at transfer point of filter cake conveyor	3/12/64	7.2 8.6	Same as above. Door open toward dryer. Wind direction variable.

UCC 004960

(1) MPPCF - Millions of particles per cubic foot of air. All particles counted.

Union Carbide trial exhibit UC-2629: Paul B. McDonie to K. W. Lentz on March 1964 King City Asbestos Dust Deter...
ACL Doc 17578 · Page 5 of 5
Published by AsbestosClaims.Law
asbestosclaims.law/library/17578/5