

FILE NAME: Caterpillar (CAT)

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**CATERPILLAR TRACTOR CO.**

MORTON

DATE April 13, 1982

PLANT OR
OFFICE Morton

DEPT. Parts Distribution

ATTN. J. C. Harris

PLANT OR OFFICE	DEPARTMENT	ATTENTION	
☐ DESTROY		FILE UNTIL (DATE)	

cc: G. W. Broadbear - East Peoria Labor Relations
 C. Carter - MPDC Safety
 B. Ghelardini - Delavan
 G. W. Grawey, M.D. - Medical, AB1D
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This memo is to advise you of hourly employees asbestos fiber exposure at the Caterpillar Delavan facility from 1974 to 1982 during the processing (riveting), assembly and packaging of parts containing asbestos fibers. The attached Table I summarizes the 1981-82 analysis of fibers from the parts containers (before processing and assembly), as well as from the samples of air in the employees' "breathing zone" during processing, assembly and packaging. It also contains the 8 hour time weighted averages (TWA) for employee exposures on the dates mentioned. The 8 hour TWA values are less than OSHA's permissible exposure limit of 2 fibers/cubic centimeter (cm³), but greater than OSHA's trigger level for medical surveillance testing of 0.1 fibers/cm³. An analysis of the employee personal samples on February 16, 1982 disclosed that 80-100% of the fibers in the employees' "breathing zone" were asbestos fibers which means that the 8 hour TWA of 0.41 fibers/cm³ was almost all asbestos on each personal sample.



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Caterpillar is obliged to advise and provide the employees with the required medical testing -- annually during exposure and lastly upon exposure termination (i.e., leaving the job class or if engineering solution terminates exposure). The medical testing consists of administration of a relevant health history questionnaire, chest Xray and pulmonary function test (breathing test), all of which can be done at the Morton Parts Distribution Center Medical Division. Initial investigation suggests that 7 retired employees and 11 active employees have had the 2A21 job classification at Delavan since 1974, and may have performed the operation exposing them to asbestos.

Caterpillar's Aurora, Illinois Plant had a similar situation arise about six years ago when the Plant Engineering cleanup crew was exposed to asbestos when disposing of residue from a "clean" (no overexposure) brakeline drilling/riveting operation. The Aurora Plant administered medical testing to active and past (retirees) employees who had performed the Plant Engineering cleanup job. The entire drilling/riveting operation was moved out of the facility to subcontractors.

I suggest that a presentation for the exposed hourly workers and retirees (if available) be constructed by myself with critical input from Morton and Parts Distribution Safety personnel. The presentation would then be previewed by Morton Parts Distribution Center senior management (Gerry Ward's staff) and Jack Ferguson's Parts Operations' management group with attendance at either of these sessions by Medical/Industrial Hygiene G.O., Safety G.O. and Labor Relations (Peoria area and Parts Operations).

The presentation to the hourly workers would be attended by the exposed workers as well as those managers deemed appropriate by Labor Relations, but hopefully including a representative from each of the above mentioned departments and groups given the preview. An alternative would be to have separate one-on-one discussions between Dr. Neu and each employee with no outside attendance.

The presentation would include:

1. 1981-82 Delavan asbestos exposure data as in Table I.
2. Where this exposure fits with the OSHA standard as in Table I.

3. Medical tests to be done:

What -- Health history questionnaire.
Pulmonary function test.
Chest Xray.

Whom -- All active and past possibly exposed employees.

Where -- MPDC Medical Division.

When -- Within several weeks of the presentation. This will be a final exposure termination test if the process is moved out of the facility to a supplier.

4. Why Dr. Neu feels there is a minimal health hazard to any of the employees who have done this job.

- All the scientific studies discuss various amounts of asbestos fibers/cm³ on a daily exposure basis for at least 25-50 years of work time as being the "necessary amount of asbestos exposure" to cause asbestos-related lung disease (fibrosis and cancer). If we did some simple mathematical calculations, we can see how minimal the present and past Delavan workers exposure has been compared to the asbestos workers in the scientific studies who have developed asbestos-related lung disease.

If present OSHA-Permissible Exposure Limit is 2 fibers/cm³ (8 hour TWA) -- the law -- then 5 days/week x 52 weeks x 25 years = 6,500 work days in 25 years.

Instead of 2 fibers/cm³ for 25 years = 50 fiber-years, we'll say 2 fibers/cm³ for 6,500 work days = 13,000 fiber-days.

If present OSHA medical surveillance level is 0.1 fibers/cm³ (8 hour TWA), then 5 days/week x 52 weeks x 25 years = 6,500 work days in 25 years.

Instead of 0.1 fibers/cm³ for 25 years = 2.5 fiber-years, we'll say 0.1 fibers/cm³ for 6,500 work days = 650 fiber-days.

If Delavan exposure level is 1 man worked 2 days every 3 months since 1974, then $8 \text{ days/year} \times 8 \text{ years} = 64 \text{ work days in 8 years.}$

$0.5 \text{ fibers/cm}^3 \text{ for 64 days} = \underline{32.0 \text{ fiber-days.}}$

If Delavan exposure level is 9 men worked 2 days every 3 months since 1974, then $8 \text{ days/year} \times 8 \text{ years} = 64 \text{ work days in 8 years.}$

$64 \text{ work days/9 men} = 7.1 \text{ days/man in 8 years.}$
 $0.5 \text{ fibers/cm}^3 \text{ for 7.1 days} = \underline{3.55 \text{ fiber-days.}}$

If Delavan exposure level is 18 men worked 2 days every 3 months since 1974, then $8 \text{ days/year} \times 8 \text{ years} = 64 \text{ work days in 8 years.}$

$64 \text{ work days/18 men} = 3.6 \text{ days/man in 8 years.}$
 $0.5 \text{ fibers/cm}^3 \text{ for 3.6 days} = \underline{1.8 \text{ fiber-days.}}$

The Delavan exposure which was likely at 3.6 fiber-days divided by 13,000 fiber-days (OSHA) was $2/10,000 = 1/5,000$ of the suggested safe time exposure by OSHA.

The Delavan exposure which was likely at 3.6 fiber-days divided by the most conservative (most protective) exposure limit found, 650 fiber-days (NIOSH), was $1/200$ of the suggested safe time exposure by NIOSH ($1/400$ if all 18 men performed job equally since 1974).

This means that the Delavan workers were exposed to $1/5,000$ of OSHA's protective limit and between $1/200$ and $1/400$ of the most conservative suggested limit which was NIOSH's (which even the most critical asbestos researchers would agree is protective).

Almost all those workers who have asbestos lung disease mentioned in scientific studies have had exposures well over 13,000 fiber-days which is OSHA's protective limit.

The Delavan employees must be advised to avoid smoking. To quote Irving Selikoff et al, an asbestos researcher who interprets the scientific studies on asbestos most favorably toward workers: "It

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seems clear, then, that lung cancer is uncommon among asbestos insulation workers who have no history of cigarette smoking, and that if the risk is increased, such an increase is not great." It is interesting to note that a non-asbestos-exposed smoker has twice the chance of developing lung cancer as does a non-smoking asbestos worker. However, a smoking asbestos worker has 10 to 14 times the chance of developing lung cancer as the non-smoking asbestos worker.

5. To eliminate the exposure, Caterpillar is going to have this processing, assembly and packing done by a supplier starting in August, 1982.

I would appreciate your comments at the preview session you attend or before if it seems appropriate.

M.T. Neu

MTNeu
Medical Director
U.S. Distribution Operations
MPDC - Ext. 3387
dlf

Attach.

TABLE I

Sampling Date	Parts Container Bulk Fiber Sample (Analysis for % Chrysotile Asbestos)	Employee Personal Sample (Analysis for % Chrysotile Asbestos)	Employee Personal Sample 8 hour TWA (fibers/cm ³)
6/17/81 6/19/81	10-11%	NONE DONE	0.01
11/30/81 12/1/81	<5%	NONE DONE	0.5 0.2
2/16/82	20%	80-100%	0.41

OSHA Permissible Exposure Limit (8 Hour TWA) = 2 Fibers/cm³.

OSHA Medical Surveillance Trigger Level (8 Hour TWA) = 0.1 Fibers/cm³.

MTN
4/13/82