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A. Anderson, Exhibit 3
5/4/98 Block v Maremont

May 29, 1973

Mr. J. A. Keller
Personnel Services Supervisor
General Services Division

cc M. A. Harris, M.D.
S. M. Luke
P. R. Veysey

Subject: Asbestos Fiber Air Sampling - Arizona Proving Grounds

The Department of Labor, under the authority of the Occupational Safety and Health Act of 1970 (OSHA), in Section 1910.93a of the Federal Register dated October 18, 1972 has promulgated occupational health standards in relation to the use of asbestos and asbestos laden materials. In response to these standards, industrial hygiene studies were conducted on April 25-26, 1973, at the Arizona Proving Grounds to determine employe exposure to airborne asbestos fiber. Results of air samples taken and instrumentation used are attached.

Employe exposure at the Arizona Proving Grounds to asbestos fiber emanate from brake rebuilding,
General plant ventilation is the only engineering control used for these operations.

but respirators are not worn during brake rebuilding or pipe covering.

Brake rebuilding of disc and conventional brakes on cars and trucks is done as part of the brake testing program and as routine maintenance. There is no set pattern to the type of brakes and vehicles involved, or to the frequency of the rebuilds. The frequency of rebuilds during our visit was three per week,

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but could go as high as 20 per week. Dust evolves from dropping wheels from the vehicle and blowing off brake assemblies and drums. The policy of this location is not to permit blow offs, but employes find it necessary to blow off truck brake assemblies and drums.

The provisions of the OSHA asbestos standard enumerated in Section 1910.93a of the Federal Register applicable to employe asbestos exposure at the Arizona Proving Grounds are:

1. A Threshold Limit Value (TLV) of five fibers greater than five microns in length per milliliter of air, and a ceiling concentration of 10 fibers greater than five microns in length per ml of air. The TLV will be reduced effective July 1, 1976 to two fibers greater than five microns in length per milliliter of air.

2. Local exhaust ventilation of tools and processes if airborne fiber concentrations exceed the TLV or ceiling concentration.

3. Special work practices such as wet methods and isolation if airborne fiber concentrations exceed the TLV or ceiling concentration.

4. Approved respirators varying with the intensity of the exposure shall be used when spraying, removing or demolishing equipment or structures covered with asbestos or asbestos laden materials.

5. Special clothing and change rooms must be furnished employes exposed to asbestos concentrations exceeding the ceiling concentration limit.

6. Special clothing furnished must be collected in sealed containers and labeled per labeling specifications stated in subparagraph (ii), page 22144, of the Federal Register. In addition, the laundry must be made aware of the asbestos hazard.

7. Air samples must be collected representative of employe breathing zone exposure at intervals no greater than every six months if the TLV or ceiling concentration limit may be expected to be exceeded.

8. If air samples taken indicate exposures greater than prescribed limits, then caution signs must be posted per pages 22143 and 22144 subparagraph 5 of the Federal Register and the area must be cordoned off.

9. Asbestos or asbestos laden waste materials must be cleaned by vacuum and disposed of in sealed containers and labeled per labeling specifications stated in subparagraph (ii), page 22144 of the Federal Register.

10. Employes exposed to concentrations of asbestos fiber exceeding prescribed limits must be notified in writing of the exposure and corrective action contemplated within five days of the finding.

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11. The employer shall provide or make available medical examinations to employes who may be exposed to concentrations exceeding prescribed limits. These examinations shall include a pre-employment, annual and termination examination consisting of posterior-anterior 14 x 17 inches chest roentgenogram and pulmonary function tests to include forced vital capacity FVC and forced expiratory volume at one second FEV. In addition, a history to previous exposure to carcinogens and smoking should be obtained.

Results of the air samples taken during our studies indicated an overexposure to the ten fibers greater than five microns in length per ml of air ceiling concentration limit prescribed by OSHA. This air sample was taken during blow off of truck brake drums and assemblies. The time weighted average exposure of this employe, who was performing brake rebuilding on trucks, was also significantly greater than employes performing brake rebuilding on passenger vehicles. The mitigating factor is blow offs are not performed during passenger vehicle brake rebuilding. The available literature pertaining to asbestos fiber exposure during brake rebuilding, concludes that asbestos fiber exposure is minimal when blow offs are prohibited or limited.

Based on the results of our studies, it is our opinion that the following measures are required to comply with OSHA standards and to protect employe health.

1. All blow offs of brake drums and assemblies should be strictly prohibited. A review of current literature indicates that vacuuming with a brush attachment is a suitable alternative from the standpoint of dust and fiber control and does not materially hinder the brake rebuilding operation. If a portable vacuum is used, a high efficiency filter should be employed on the air discharge.

2. All waste materials which may contain asbestos should be cleaned up by vacuum and disposed of in properly labeled sealed containers.

3. The employe who was found to be exposed to asbestos fiber concentrations in excess of the ceiling concentration limit prescribed by OSHA should be notified in writing as stated in Mr. F. E. Toth's letter of May 16, 1973.

4. Employes whose job description includes brake rebuilding on heavy trucks should be given an immediate medical examination meeting the requirements specified by OSHA.

5. Until a substitute is found for the blow off procedure performed during truck brake rebuilding, respirators approved under schedule 21 and special clothing specified by OSHA should be worn by employes performing truck brake rebuilding. Other procedures prescribed by OSHA relative to special clothing must also be followed.

6. The single use respirator used should also be used when removing asbestos from engine components which have completed testing.

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7. Until a substitute is found for the blow off procedure performed during truck brake rebuilding, caution signs must be posted as specified by OSHA and the work area of the truck must be cordoned off.

Follow-up monitoring will be conducted during October 1973 to comply with the periodic air sampling requirements of OSHA.

Henry S. Lick
Industrial Hygienist
Industrial Hygiene Section
Employe Health Services Department

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Data Sheet #1

Arizona Proving Grounds

Asbestos

Location	Concentrations of Fibers Greater than 5 Microns in Length/Milliliter of Air
OSHA Asbestos Threshold Limit Value (TLV) TLV effective July 1, 1976 Ceiling Limit	
2. Passenger vehicle brake rebuilding - conventional brakes - employe G. Chambers, SS #5124 - B.Z. - respirator not worn.	
a) Dropping wheels, tear down and rebuilding - time weighted avg. determination	0.3
b) Tearing down brakes and wiping out drums - peak air concentration "	0.4
c) Mounting wheels -	0.5
3. Passenger vehicle brake rebuilding - disc brakes on all 4 wheels - employe G. Chambers, SS #5124 - B.Z. - respirator not worn.	
a) Dropping wheels, tear down, and obtaining materials	0.2
b) " " " " - peak air concentration determination	0.1
c) Micrometer measurements and rebuilding	0.1
d) "	0.1
Calculated time weighted average concentration	0.13

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Data Sheet #2

Location	Concentrations of Fibers Greater than 5 Microns in Length/Milliliter of Air
4. Louisville 750 truck brake rebuilding - conventional brakes - employe F. Wasilewski, SS #9799 (B.Z.) - respirator not worn.	
a) Dropping wheels and tear down	0.2
b) Blowing out drums, tear down, and obtaining parts	3.1
c) " " " - peak air concentration determination	1.6
d) " " " " " " "	12.2
Calculated time weighted average concentration	1.2
5. Louisville 750 truck brake rebuilding - same operation as item No. 4 - general air sample	0.1

Instrumentation: Mine Safety Appliances Model G Pumps with Millipore Type AA Membrane Filters 0.8 micron pore size

Analysis: 430X Phase Contrast Microscopy by Environmental Health Laboratories, Farmington, Michigan

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