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THE HARTFORD

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Mr. Floyd Robinson
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Re: Hartford A & I (Vanderbilt Policy #)

Dear Floyd:

Attached please find data sheets reflecting the results of assorted dust samples collected July 29th and 30th, 1982 representing most mine and mills areas. As noted in the "Method of Study" addendum also attached, this review involved an overview sampling strategy versus strict adherence to full shift personnel dust monitoring (as practiced by regulatory agencies). Data reflected in this study should reflect maximum dust loadings for most routine milling and mining operations. It is hoped data obtained during this effort will provide a "baseline" against which future data may be compared for a clearer, increasingly more valid picture of over-all dust exposures throughout the site.

Samples were collected and analyzed for various particulate characteristics: total particulates, respirable particulates, % quartz and free silica and fiber content (controversial NIOSH asbestos technique). Under the "Standards" addendum (attached) seven dust standards or threshold limits are listed which, depending upon particulate constituency (understandably open to assorted view points), may or may not apply to various samples. Relative to these assorted standards the following was noted:

- a. The highest total dust level obtained was 9.3 milligram per cubic meter (mg/m³) reflected in mill #1 near number eight screen in the wheeler area. This level (and consequently all others) was below standard "A" (see attached standards section) for total dust with <1% quartz. This concentration did exceed standards C & E as did one other total dust sample obtained in mine #1 700 level for crusher operation. Standard C refers to Total Dust with >1% Quartz (TLV 6 mg/m³) while standard E refers to Talc containing no fibers (TLV 2 mg/m³ - an American Conference of Governmental Industrial Hygienist Standard).

Our reports are based upon observations or information available at the time of surveys which may not discover all hazards. We cannot wa safety, health or compliance with any rule or regulation. We can only assist you in fulfilling your responsibility in controlling accidents.

Loss Control Depart

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- b. Standard E (2 mg/m³) for total Talc Dust containing no fibers) was the standard most often exceeded in all sample areas except mine #4 where very low total dust was reflected (non-talc anyway).
- c. Free silica levels for all respirable samples in all areas were very low and all total respirable dust samples (particles smaller than 10 microns) were very low as well. Relative to total respirable dust, these results vary significantly from prior respirable dust samples which did appear elevated. Of interest in this areas as well is the small but detected % quartz reflected in the mill samples. Prior analysis of finished products reflected no quartz content. Obviously this is a variable in determining which standard applies to which set of samples. This aspect will require a closer look in subsequent sampling.
- d. Regarding fiber results relevant to the present asbestos standard, analytical technique and fiber definition, no asbestos (trémolite) levels exceeded the 2 fibers/cc > 5µm in length standard. While several samples came close: 1.8 at the Gyratory crusher mill #1 and 1.7 in the pocket area 700 level mine #1, these results do vary from prior results (reflecting excess levels). As noted in the attachments, these samples were collected in the interest of completeness and general follow-up information. The Hartford is aware of the controversy surrounding the "asbestos" definition and NIOSH analytical method and cannot (and should not) assume a position. Until the sampling and/or analytical methods are officially changed The Hartford is obligated (by virtue of its I.H. Certification) to follow prescribed methods.

In summary, the areas and activities reviewed reflected elevated dust levels but lower (significantly in some areas) than some previously obtained. There is considerable and valid controversy over what standard applies to what dusts and the "asbestos" issue clearly remains at issue. At this point in time I would urge the following:

- 1. Follow-up sampling with more emphasis on particulate constituency to further support standard applicability. Review and comparison of all prior sampling also desired to provide a clearer, more valid dust exposure picture.
- 2. Continue the present medical programs and carefully correlate respiratory results with the use of respirators and employee mine exposure history (part of ongoing epidemiological study related to the asbestos controversy).
- 3. Employees with depressed lung capacities should wear dust respirators as a matter of policy. Further, all mine workers and mill employees should employ simple dust masks. A mandatory use policy for particularly dusty activities would be a wise precautionary move. Most mine work (drilling, crushing, etc.) and many mill areas (open crusher exposures, some maint. activities, area clean-ups, etc.) would fall into this activity.

DATA SHEET - DUSTS
Mill # 1 (Talc)

<u>Sample</u>	<u>Liter Volume</u>	<u>Hr. Sample Duration</u>	<u>Location</u>	<u>Possible Standard Excesses</u>	<u>mg/m3 Found (Containments)</u>
31	396	3 1/2	Wheeler area near #8 screen-fixed	(C, E)	9.3 Total Dust
27)	396	3 1/2	Fixed between 1, 2 & 3 Harding Mills	-	1.2 Total Dust
2069)	432	4	Fixed between 1, 2, 3 Harding Mills	-	.1 Resp Dust .01 SiO2 (TLV 1.1
28)	396	3 1/2	Fixed between Harding Mills 4 & 5 on catwalk	-	1.4 Total Dust
AS-5)	240	2	Between 4 & 5 Hardings	-	.5 <u>Fibers/cc</u> (>5
15	396	3 1/2	Fixed top floor over Harding #5-next to #5 Separator	-	.5 Total Dust
7	396	3 1/2	Fixed over bag Filler #3 Station-Fire Mesh #325	(E)	3.2 Total Dust
13)	324	3	Fixed on Gyratory Crusher	(E)	5.2 Total Dust
AS-2)	360	3	" "	-	1.8 <u>Fibers/cc</u> (>
1924	204	2	Fixed opposite #4 con- veyor-along wall near electrical boxes	-	.03 SiO2 (TLV. 8 .03 Resp. Dust
AS-3	Control		-0 fibers cc (5 UM)		

Line #1 (Talc)

<u>Sample</u>	<u>Liter Volume</u>	<u>Hr. Sample Duration</u>	<u>Location</u>	<u>Possible Standard Excesses</u>	<u>mg/m3 Found (Contaminants)</u>
30	486	4 1/2	(P) LiGaums, 700 Level Crusher	(C, E)	6.6 Total Dust
12	486	4 1/2	(P) E. Theriault 1100 Level Crusher	(E)	3.7 Total Dust
32)	415	4	Fixed near J. Regan	(E)	2.4 Total Dust
2074)	408	4	at 200 level	-	- SiO2
AS-1	480	4	pocket	-	1.7 fibers/cc
2074	408	4		-	.98 Resp. Dust
25	486	4 1/2	Fixed at surface crusher outside booth	(E)	2.6 Total Dust
8	486	4 1/2	Fixed surface crusher inside booth	-	.2 Total Dust
16	415	4	(P) D. Mallon 700 level Elmco Operator at 13 drift	(E)	2.4 Total Dust

Mine #2 (Talc)

<u>Sample</u>	<u>Liter Volume</u>	<u>Hr. Sample Duration</u>	<u>Location</u>	<u>Possible Standard Excesses</u>	<u>mg/m3 Found (Containment)</u>
9	810	7 1/2	Inside Cab of Front Loader B. Davis	-	.4 Total Du
22	810	7 1/2	Inside cab of dump truck Mac Zo	-	.9 Total Du
19	810	7 1/2)	Fixed near crusher just	(E)	2.7 Total D
AS-5	900	7 1/2)	outside control room -	-	.5 <u>Fibers c</u>
1905	765	7 1/2)	7' from crusher	-	.14 <u>Resp Du</u> .006 SiO2
21	324	3	Fixed inside crusher Operator booth	(E)	2.0 Total D

Mine #4 (Wallaston site)

14	432	4	In front loader cab	-	.2 Total Du
29	432	4	20' from conveyor botton load side	-	.2 Total Du
24	432	4	Directly over belt conveyor	-	.9 Total Du
11	432	4	Near 1st primary crusher - Top 7' from dump	-	.46 Total D