

CT-1419

JL

Location

CertainTeed

Date

December 18, 1980

To

Jack Anderson

Hillsboro 257

Subject

INDUSTRIAL HYGIENE SURVEY "B" PLANT -
NOVEMBER 12-14, 1980

From

Janis Woodson 

Location and mail code

VF Corp #4

cc: F. Timpe - 2125/2B
 J. McGinley - 2125/2B
 D. Hall - 2125/2B

B. Blakeslee - 1126/00
 N. Pocock - Hillsboro 257
 O. Kittilstad - 1125/4

Attached find a completed log of the personal/area air samples and audiodosimetry results. These samples were obtained November 12-14 during the new B-Plant start-up, with some follow-up air sampling and noise work done in A-Plant.

A total of 52 air samples were obtained with 44 being in B-Plant and 8 in A-Plant. One 20 minute sample (#171) taken on a Maintenance person was heavily loaded with particulate and an exact count was not possible, however, in order to determine an exposure level an attempt was made to count the sample. The results were found to be in excess of 61 f/cc. Insufficient data was obtained, therefore a TWA was not calculated for this employee. This sample was found to be above the current OSHA ceiling concentration of 10 f/cc.

Sample number 150 taken on the Mixer Operator for 60 minutes was found to be 4.6 f/cc. This employees time weighted average (TWA) was 1.1 f/cc. The current OSHA 8 hour time weighted average (TWA) is 2.0 f/cc.

Both of these samples (#150/171) were taken on employees involved in clean-up and repairing a block up at the Bag Opener flat conveyor. The Maintenance person (sample #171) was in the pit unclogging raw fiber and putting it in plastic bags while the Mixer Operator (sample #150) was on the upper level emptying the bags back into the bag opener. All employees in the area wore 3M-8710 air purifying respirators.

While the current OSHA Asbestos Standard 1910.1001 d2(i) of the Federal Register (attached) requires only air purifying respirators for levels from 10-100 f/cc short term exposures, it is our recommendation that when a block up of this type occurs or when an exposure of this level is expected or unknown the employees involved should be outfitted with powered air purifying respirators or supplied air respirators (continuous flow or pressure demand).

All other samples taken during this survey were within the OSHA standard with only 2 other samples being above 1.0 f/cc (samples #153/#169). They were taken on the Mixer Operator (#153) and the Crusher Operator (#169). Both wore 3M-8710 respirators. It is recommended that any area/job position that exceeds 1.0 f/cc should be reviewed for possible engineering changes and monitored regularly for all sizes and classes of pipe to insure that the employees exposure remains below the 2.0 f/cc level. If a level of 2.0 f/cc or greater is found, respirators are required until an acceptable level is again achieved.

Hillsboro A/C Plant
Industrial Hygiene Survey
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Also, more testing is needed at the Mandrel Handler job position. Of the 5 samples taken at this position during this survey, 4 were voided due to heavy particulate concentration. It is recommended that plant personnel sample this job position for personal and area exposures for an 8 hour shift, limiting each sample to no more than 60 minutes each.

The results of the audiodosimetry noise survey indicated 3 job positions with a daily dose percentage above 100% (90 dBA dosimetry). The current OSHA standard limits the daily noise dose to 100% with a 90 dBA dosimeter.

Those positions exceeding the 100% are:

Mandrel Handler (Sample 197)	185%
Relief Person (Sample 198)	111%
Crusher Operator (Sample 199)	193%

It is recommended that hearing protection be required for these job positions until proper and permanent noise controls can be instituted.

One thing to keep in mind when reviewing all of the sampling results from this survey, is that these samples were taken during a shakedown period and that these levels are not necessarily the same levels that would be found during normal operations. Continued surveillance and follow-up work of the new B-Plant by plant personnel, along with help from Corporate Health and Safety should be made. All equipment and operation changes and improvements should be noted when documenting the new exposure levels.

A complete and comprehensive survey report combining the May 27-30, 1980 survey and the November 12-14, 1980 survey is forthcoming detailing sample analysis and observations.

If you have any questions or comments don't hesitate to contact me.

JLW/tmf

CTD020607

Hillsboro A/C Plant
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November 12 - 14 1980

Table III

Personal Dust Exposures "A" Plant

No. 80	POSITION/ LOCATION (Date)	NAME/AREA	ANALYSIS FOR	TIME	MIN.	RESULTS F/CC	TWA FOR SAMPLE PERIOD	REMARKS
142	#1 Boring Mill Operator (11/14/80)	J. Slovsk	Fiber	7:50a 11:45a	235	0.29	0.27	Boring 6" cplgs
143				11:45a 3:00p	195	0.24		
144	#1 P M Lathe Operator (11/14/80)	A. Coaster	Fiber	7:55a 10:00a	125	0.10	0.084	6" 1/4 length FM's
145				10:00a 3:05p	305	0.078		
146	#1 P M Lathe Helper (11/14/80)	T. Brown	Fiber	8:20a 10:00a	100	0.11	0.15	6" 1/4 length FM's
147				10:00a 3:10p	310	0.16		
148	Large Coupling Saw and Rework Saw Operator (11/14/80)	J. Foster	Fiber	8:00a 1:35p	335	VOID	—	1/4 hour Coupling Saw 3 1/4 hrs. putting rings in couplings 1 1/2 hrs Rework Saw Void sample heavy particulate
149				1:35p 3:05p	90	0.55		6" Rework

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Hillsboro A/C Pipe Plant
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TABLE _____
Personal Dust Exposures "B" Plant

No. 80	POSITION/ LOCATION (Date)	NAME/AREA	ANALYSIS FOR	TIME	MIN.	RESULT F/CC	TWA FOR SAMPLE PERIOD	REMARKS
Manufacturing Department								
150	Mixer Operator 11/13/80	R. Lacy	Fiber	8:05a 9:05a	60	4.6	1.1	6"150 pipe Helping unblock bucket elevator at Bag opener
151				9:05a 9:35a	30	0.26		Bag opener not working with 100% efficiency having to slit Bags by hand One window to Bag opener open all the time
152				9:35a 11:20a	105	0.36		
153				11:20a 1:40p	140	1.0		Employee wore a 3M 8710 Respirator throughout the entire shift.
154				1:40p 3:50p	130	0.46		
155	Machine Tender 11/13/80	J. Owens	Fiber	8:15a 11:01a	166	0.21	0.20	6"150 pipe
156				11:01a 1:45p	164	0.17		
157				1:45p 3:55p	130	0.23		
158	Control Operator 11/13/80	H. Cox	Fiber	8:07a 11:00a	173	0.025	0.026	6"150 pipe visable mist at press section
159				11:00a 1:42p	162	0.027		
160				1:42p 3:50p	128	0.026		
161	Mandrel Handler 11/13/80	C. Salinas	Fiber	8:10a 11:01a	171	0.11	—	6"150 pipe
162				11:01a 1:46p	165	VOID		Void sample - heavy particulate
163				1:46p 3:55p	129	VOID		Steamy area feel mist in air Void sample - heavy particulate

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Hillsboro A/C Pipe Plant
Industrial Hygiene Survey
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TABLE _____
Personal Dust Exposures "B" Plant

No. 80	POSITION/ LOCATION (Date)	NAME/AREA	ANALYSIS FOR	TIME	MIN.	RESULT F/CC	TWA	REMARKS
164	Take off Person 11/13/80	J. Payne	Fiber	10:35a 1:35a	180	0.022	0.022	6"150 pipe Trayloader
165				1:35p 5:00p	205	0.022		
166	Relief Person 11/13/80	R. Pavelka	Fiber	10:26a 1:52p	206	0.13	0.14	6"150 pipe
167				1:52p 5:00p	188	0.15		
Miscellaneous Departments								
168	Crusher Operator 11/13/80	C. Harris	Fiber	8:45a 10:36a	111	0.36	0.78	Secondary Crusher Block-up 8:45a - 9:30a
169				10:36a 12:00N	84	1.7		Employee wore a 3M 8710 Respirator throughout entire shift
170				1:30p 2:50p	80	0.37		
171	Maintenance Person 11/13/80	M. Ruda	Fiber	8:42a 9:02a	20	>61*	-	Working on a mixing system Block-up at flat conveyor for the Bag opener. All employees in the area wore 3M 8710 Respirators
172				9:02a 9:55a	53	0.32		at water treatment slurry tank.

* Note - filter heavily loaded with particulate actual count would be greater than 60f/cc.

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Industrial Hygiene Survey
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Table _____
Environmental Dust Exposures "B" Plant

No. 80	POSITION/ LOCATION (Date)	NAME/AREA	ANALYSIS FOR	TIME	MIN.	RESULT	TWA for Sample period	REMARKS
173	Fiber Warehouse 11/12/80	Area	Fiber	11:04a 2:03p	179	0.050	—	pump 4' from floor setting on a pallet of ML 6 fiber located near the Bag opener. all doors in area open
174	Bag Opener at Compactor 11/12/80	Area	Fiber	11:00a 1:47p	167	0.39	—	6"150 pipe 2 windows on Bag Opener open. pump sitting on Bag Compactor 1' from window 2' from platform
175				1:47p 4:13p	146	0.41		
176	Bag Opener at Control Panel 11/13/80	Area	Fiber	8:30a 9:02a	32	0.23	—	no dump made. 1 window, nearest control panel, open. —
177				9:02a 9:37a	35	0.65		one dump made 1 window nearest control panel open —
178				9:37a 11:15a	98	0.43		pump setting at control panel 1' from window 4' from platform
179				11:15a 1:37p	142	0.70		
180	Mixer Operator's Desk 11/12/80	Area	Fiber	11:52a 2:46p	174	0.16	—	pump setting 4' from floor after clean up of #1-#2 mixer area
181	Willow Mill 11/12/80	Area	Fiber	10:56a 11:40a	44	0.24	—	small leak in Willow Mill -- 11:30 leak fixed 11:30 - 11:50 block up/ cleanup #2 mixer area
182				2:03p 4:10p	127	0.13		sample taken to measure effectiveness of repair work made to stop leak on Willow Mill
183	Willow Mill 11/12/80	Area	Fiber	8:27a 10:21a	114	0.22	—	more sealing/repair work done on Willow Mills

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Table _____
Environmental Dust Exposures "B" Plant

No. 80	POSITION/ LOCATION (Date)	NAME/AREA	ANALYSIS FOR	TIME	MIN.	RESULT	TWA for Sample period	REMARKS
184	Fiber Scale 11/12/80	Area	Fiber	2:46p 4:12p	86	0.13	---	pump setting 3' from floor on fiber scale
185	2nd Floor Mixer 11/12/80	Area	Fiber	11:10a 1:57p	167	0.25	---	pump located on 2nd floor hanging 3' from platform 20' above 1st floor
186				1:57p 4:15p	138	0.21		
187	Mixer #4/ Wetting Screw 11/12/80	Area	Fiber	11:13a 1:58p	165	0.32	---	pump setting 1' from #4 mixer 2' above covered wetting screw.
188				1:58p 4:07p	129	0.20		
189	Control Operator's Station 11/12/80	Area	Fiber	11:30a 2:40p	190	0.023	---	pump approx 5' from Roll-up/Press Section at operators station
190				2:40p 4:16p	96	0.047		
191	Mandrel Handler's Station 11/12/80	Area	Fiber	11:35a 2:40p	185	VOID	---	pump approx 5' from Roll-up/Press Section at operators station Void sample - heavy particulate
192				2:40p 4:17p	97	VOID		Void Sample - heavy particulate,
193	Stripper Station 11/12/80	Area	Fiber	12:00N 4:20p	260	0.0004	---	No employees in area pump setting on Mandrel Return side on control panel approx. 4' from stripper

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Hillsboro A/C Plant
Industrial Hygiene Survey
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TABLE _____
Audiotosimetry Results "B Plant"

NO. 80	POSITION/ LOCATION (Date)	NAME	TIME	Min.	RESULTS Eight Hour % Dosimeter		REMARKS
					85 dBA	90 dBA	
Manufacturing Department							
194	Mixer Operator (11/13/80)	R. Lacy	10:15a 3:50p	335		87%	6"150 pipe employee in Mixing Room-normal operations
195	Machine Tender (11/13/80)	J. Owens	10:22a 3:55p	333		85%	6"150 pipe
196	Control Operator (11/13/80)	H. Cox	10:30a 3:50p	320		---	VOID SAMPLE
197	Mandrel Handler (11/13/80)	C. Salinas	10:33a 3:55p	322		185%	6"150 pipe Mandrel Return behind employee accounting for most of his exposure.
198	Relief Person 11/13/80	R. Pavelka	10:26a 5:00p	394		111%	This job position requires work in all areas of the Manufacturing Department
Miscellaneous Departments							
199	Crusher Operator 11/13/80	C. Harris	10:36a 12:00N 1:30p 2:50p	164		193%	

CTD020613

Chapter XVII—Occupational Safety and Health Admin. § 1910.1001 Title 29—Labor § 1910.1001

§ 1910.1001 Asbestos.

(a) *Definitions.* For the purpose of this section, (1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

(2) "Asbestos fibers" means asbestos fibers longer than 5 micrometers.

(b) *Permissible exposure to airborne concentrations of asbestos fibers—(1) Standard effective July 7, 1972.* The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(2) *Standard effective July 1, 1976.* The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(c) *Methods of compliance—(1) Engineering methods.* (i) Engineering controls, engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in paragraph (b) of this section.

(ii) *Local exhaust ventilation.* (a) Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z92-1971, which is incorporated by reference herein.

(b) See § 1910.6 concerning the availability of ANSI Z92-1971, and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

(iii) *Particular tools.* All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(iv) *Emergency.* (a) Where both respirators and personnel rotation are allowed by subdivision (1), or (iii), of this subparagraph, the employer shall establish a respirator program in accordance with the requirements of the American National Standards Practice for Respiratory Protection, ANSI Z88.2-1969, which is incorporated by reference herein.

(b) The employer shall establish a respirator program in accordance with the requirements of the American National Standards Practice for Respiratory Protection, ANSI Z88.2-1969, which is incorporated by reference herein.

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TABLE 2-3—MINERAL DUSTS

Substance	Mppcf	Mg/M ³
Asbestos (respirable).....	200	10 mg/M ³
Quartz (total dust).....	500	25 mg/M ³
Crystalline silica (total dust).....	500	25 mg/M ³
Crystalline silica (respirable).....	50	2.5 mg/M ³
Coal dust (respirable).....	15	0.75 mg/M ³
Iron dust (respirable).....	15	0.75 mg/M ³
Lead dust (respirable).....	10	0.5 mg/M ³
Mercury dust (respirable).....	10	0.5 mg/M ³
Nickel dust (respirable).....	10	0.5 mg/M ³
Platinum dust (respirable).....	10	0.5 mg/M ³
Rhodium dust (respirable).....	10	0.5 mg/M ³
Rubidium dust (respirable).....	10	0.5 mg/M ³
Selenium dust (respirable).....	10	0.5 mg/M ³
Silver dust (respirable).....	10	0.5 mg/M ³
Sodium dust (respirable).....	10	0.5 mg/M ³
Strontium dust (respirable).....	10	0.5 mg/M ³
Tantalum dust (respirable).....	10	0.5 mg/M ³
Tellurium dust (respirable).....	10	0.5 mg/M ³
Thallium dust (respirable).....	10	0.5 mg/M ³
Tin dust (respirable).....	10	0.5 mg/M ³
Tungsten dust (respirable).....	10	0.5 mg/M ³
Vanadium dust (respirable).....	10	0.5 mg/M ³
Zinc dust (respirable).....	10	0.5 mg/M ³

Notes: Conversion factors—1 million particles per cubic foot = 35.4 mg/M³.

1 million particles per cubic foot of air, based on the number of particles per cubic foot in the formula.

The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

Both concentration and percent quartz for the application of this limit are to be determined from the fraction of dust in the formula with the following characteristics: containing < 5% quartz; if > 5% quartz, use quartz limit.

For more than 5% SiO₂, use the following table:

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