

Georgia-Pacific

intracompany memo

to **Mr. M. A. Palmowski** location **Chicago**
from **G. W. Green** location **Tigard**
subject **Airborne Asbestos Monitoring at** date **April 29, 1976**
Chicago Joint Cement Plant

Three production workers at the Chicago Plant were monitored for airborne asbestos fibers on April 5, 1976. All the time weighted averages continue to be well below the maximum of 5 fibers per milliliter. The overall average of 0.57 is slightly higher than the previous count. The reason for this is explained in the letter from George Fowler which is attached to this report.

The fiber counts were done by Dawn Staysert.

G. W. G.

GWG/gvp

Att.

cc: Mr. J. R. Hurd - Portland
Mr. T. W. Richards - Tigard
Mr. G. F. Fowler - Marietta

SGP 0008538

*Not GPC - I thought GPC was going to be -
Dust product being made when
he took samples*

Georgia-Pacific

intracompany memo

to **Mr. M. A. Palmowski**
from **G. W. Green**
subject **Airborne Dust Survey**

location **Chicago**
location **Tigard**
date **July 23, 1976**

The Chicago plant was sampled for ceiling concentrations of asbestos dust by George Fowler on June 28, 1976. This is a supplement to the April 5, 1976 sampling during which ceiling limit samples were inadvertently omitted. Please attach these results to that report. Results are as follows:

<u>Name</u>	<u>Location</u>	<u>Filter No.</u>	<u>Elapsed Time</u>	<u>Fibers/ml</u>
Tate Sylvester	Dry Mixer	442	15	1.55
Rafael Rodrigues	Wet Mixer	445	15	3.49
Mike Oravis	Stacking Area	433	15	1.09

GWG/gvp

atts.

cc: Mr. J. R. Hurd - Portland
Mr. T. W. Richards - Tigard
Mr. C. F. Fowler - Marietta

SGP 0008539

Georgia-Pacific



intracompany memo

to	Mr. G. W. Green	location	Tigard
from	G. F. Fowler	location	Marietta
subject	<u>Chicago Airborne Samples</u>	date	July 12, 1976

On June 28, 1976 the Chicago plant was sampled for ceiling levels of asbestos fibers airborne. Normal production was observed.

A new dryblend mixer man was working that area. He had been on the job about three weeks. General plant was clean with good housekeeping observed in most areas.

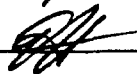
G. F. F.

GFF/gvp

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SGP 0008540

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago Date 6-28-76
 Name *TATE Sylvester Pump Serial No. B0 60288
 Title DRY Mixer Sampled by George Fowler
 Signature 

LOCATION	Dry mix area				
FILTER NO.	442				
FLOW:					
Pump Setting	6				
Liter/min (R)	1.7				
TIME:					
On	2:27				
Off	2:42				
ELAPSED TIME (min) (t)	15				
VOLUME, Liters (t x r)	25.5				
REMARKS	1 Batch of R/m filter dropped during test * Has been on Job 3 wks.				
CONCENTRATION (F) fibers/ml	1.55				

Total Sample Time (T) _____ mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago
 Name Rafael Rodriguez
 Title Wet mixer

Date 6-28-76
 Pump Serial No. B 06 0288
 Sampled by George Fowler
 Signature *GF*

LOCATION	Ready Mix Wet Mixer				
FILTER NO.	445				
FLOW:					
Pump Setting	6				
Liter/min (R)	1.7				
TIME:					
On	2:45				
Off	3:00				
ELAPSED TIME (min) (t)	15				
VOLUME, Liters (t x r)	25.5				
REMARKS	1 Batch of R/m Pumped off during test				
CONCENTRATION (F) fibers/ml	3.49				

Total Sample Time (T) _____ mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago
 Name Mike O'Grady
 Title _____

Date 6-28-76
 Pump Serial No. B 06 0288
 Sampled by George Fowler
 Signature [Signature]

LOCATION	STACKING AREA				
FILTER NO.	433				
FLOW:					
Pump Setting	6				
Liter/min (R)	1.7				
TIME:					
On	10:05				
Off	10:20				
ELAPSED TIME (min) (t)	15				
VOLUME, Liters (t x r)	25.5				
REMARKS					
CONCENTRATION (F) fibers/ml	1.09				

Total Sample Time (T) _____ mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

Date: 7-19-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 4412

ELAPSED TIME (t) 15 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 25.5 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .20 fibers/field

0	0	C	C	C	C
	0	1		C	C
	1	C		C	C
	1	C		1	
	C			C	
	C		1		
5	C		1		1
	0	C	C	1	C
	C		C	0	C
	C	1		1	C
		1		C	
-10					
	1		1		C
			C	C	C
			C		C
15		1			C
		1			C
		1			1
		1			C
		C		1	C
20					

SUBTOTALS 4 6 4 4 2 TOTAL 20

Constant k = $\frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.20 - 0)}{25.5} = 1.55$

SGP 0008544

Date: 7-19-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 445

ELAPSED TIME (t) 15 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 25.5 liters

FIELD AREA (a) 0.0432 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .45 fibers/field

0	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	2	0	1	1	2
	1	1	1	1	1
	0	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.45 - 0)}{25.5} = 3.49$$

SGP 0008545

TOTAL 45

Date: 7-19-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 4133 ELAPSED TIME (t) 15 mins.
 FLOW RATE 1.7 l/min VOLUME (V) 25.5 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) 0 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .14 fibers/field

0					
5					
10					
15					
20					
SUBTOTALS	3	3	2	2	4

SGP 0008546

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.14 - 0)}{25.5} = 1.09$$

CHICAGO JOINT CEMENT PLANT
AIRBORNE ASBESTOS DUST SURVEY

Date Sampled: April 5, 1976

Name	Location or Job Title	Time Weighted Average fiber/ml	Filter No.	Elapsed Time Mins.	Individual Cou: fiber/ml
Rafael Rodrigues	Wet Mix Operator	.37	356	154	.25
			360	128	.17
			368	95	.52
			373	72	.35
			371	58	.86
Pat Bell	All Areas	.42	354	97	.57
			370	138	.25
			361	92	.45
			365	74	.67
			358	51	.21
Mike Oravis	- Dry Blend	.89	359	103	.42
			366	120	1.12
			374	80	.44
			363	40	1.34
			372	60	.98
			369	59	1.42
Environmental	Dry Blend Lab Warehouse Wet Mix		357	94	.33
			355	120	.39
			367	147	.15
			362	108	.46

SGP 0008547

Georgia-Pacific



intracompany memo

to	G. W. Green	location	Tigard
from	G. F. Fowler	location	Marietta
subject	Chicago Sampling for <u>Airborne Asbestos</u>	date	April 6, 1976

On 4/5/76 samples were taken at the Chicago Plant. Production was limited to Ready Mix and Ready Mix Filler. Mike Oravis was a new man doing the dry blending. It was noted that due to his inexperience, an excess amount of dust was created. Generally, good housekeeping was observed at most working stations. Production for the day was just slightly down from their average production.

Please note that on two of the reports, additional pumps were used. This was due to minor malfunctions. Sample #364 is being returned as a blank.

G. F. F.

GFF/gp

SGP 0008548

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago
 Name PAT BELL
 Title _____

Date 4-5-76
 Pump Serial No. R-75-1206
 Sampled by George Fowler
 Signature [Signature]

LOCATION	ALL ARPAS	ALL AROS	ALL ARCOS	—	—					
FILTER NO.	354	370	361	365	358					
FLOW:										
Pump Setting	6	6	6	6	6					
Liter/min (R)	2.0	2.0	2.0	2.0	2.0					
TIME:										
On	7:20	8:57	11:15	1:17	2:31					
Off	8:57	11:15	1:17	2:31	3:22					
ELAPSED TIME (min) (t)	97	138	92	74	51					
VOLUME, Liters (t x r)	194	276	184	148	102					
REMARKS			30 min Lunch Pump off							
CONCENTRATION (F) fibers/ml	.57	.25	.45	.67	.21					

Total Sample Time (T) 452 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

$$55.29 + 34.5 + 41.4 + 49.58 + 10.71 = 191.48 \div 452 = \boxed{.42}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

Date 4-5-76

Name MIKE CRAVIS

Pump Serial No. B-06-0444

Title Labraea

Sampled by George Fowler

Signature [Signature]

* B-06-0422

LOCATION	DRY Blend AREA	-	-	* -	-	-				
FILTER NO.	359	366	374	363	372	369				
FLOW:										
Pump Setting	6	6	6	6	6	6				
Liter/min (R)	1.75	1.75	1.75	1.75	1.75	1.75				
TIME:										
On	7:12	8:55	10:55	12:45	1:25	2:25				
Off	8:55	10:55	12:45	1:25	2:25	3:24				
ELAPSED TIME (min) (t)	103	120	80	40	60	59				
VOLUME, Liters (t x r)	180	210	140	70 ⁶⁸	105	103				
REMARKS			30 min lunch Pump off							
CONCENTRATION (F) fibers/ml	.42	1.12	.44	1.34 ^{1.34}	.98	1.42				

Total Sample Time (T) 462 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

$$43.26 + 134.4 + 35.2 + \frac{53.6}{53.6} + 58.8 + 83.78 = \frac{409.04}{462} =$$

.89

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago
 Name Rafael Rodriguez
 Title WET Mix operator

Date 4-5-76
 Pump Serial No. B-06-0305
 Sampled by [Signature]
 Signature George Fowler
 * B-06-0288

LOCATION	WET MIX AREA	—	—	—	—				
FILTER NO.	354	360	368	373	371				
FLOW:									
Pump Setting	6	6	6	6	6				
Liter/min (R)	1.8	1.8	1.8	1.7	1.8				
TIME:									
On	7:08	9:02	11:10	1:15	2:27				
Off	9:02	11:10	1:15	2:27	3:25				
ELAPSED TIME (min) (t)	154	128	95	72	58				
VOLUME, Liters (t x r)	277	230	171	122	104				
REMARKS			* 30 min Lunch Pump off						
CONCENTRATION (F) fibers/ml	.25	.17	.52	.37	.86				

Total Sample Time (T) 507 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

$$38.5 + 21.76 + 49.4 + \frac{26.64}{25.2} + 49.88 = \frac{186.18}{507} = \boxed{.37}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

Date 4-5-76

Name ENVIRONMENTAL

Pump Serial No. B-08-0490

Title _____

Sampled by George Fowler

Signature George Fowler

LOCATION	Dry Blend	Lab	Warehouse	Wet Mix Area	Blank
FILTER NO.	357	355	367	362	364
FLOW:					
Pump Setting	6	6	6	6	1
Liter/min (R)	1.70	1.70	1.70	1.70	
TIME:					
On	7:26	9:00	11:00	1:27	
Off	9:00	11:00	1:27	3:15	
ELAPSED TIME (min) (t)	94	120	147	108	
VOLUME, Liters (t x r)	160	204	250	184	
REMARKS					
CONCENTRATION (F) fibers/ml	.33	.39	.15	.46	

Total Sample Time (T) 469 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

$$31.02 + 46.8 + 22.05 + 49.68 = 149.55 \div 469 = \boxed{.32}$$

Date: 4-24-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 2 ELAPSED TIME (t) 59 mins.
 FLOW RATE 1.75 l/min VOLUME (V) 103 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) 78 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL 78

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198(78-.04)}{103} = 1.42$$

SGP 0008553

Date: 1-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 251 ELAPSED TIME (t) 154 mins.
 FLOW RATE 1.8 l/min VOLUME (V) 277 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .39 fibers/field

0	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	3	3	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

TOTAL 39

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.39-.04)}{277} = .25$$

SGP 0008554

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 36c

ELAPSED TIME (t) 128 mins.

FLOW RATE ~~1.8~~ 1.8 l/min

VOLUME (V) 230 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .24 fibers/field

0	1	1	1	1	1
	0	1	1	1	1
	1	1	1	1	1
	1	0	1	1	1
	1	1	1	1	1
5	1	0	1	1	1
	1	0	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	0	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

TOTAL

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.24 - .04)}{230} = .17$$

SGP 0008555

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 31- ELAPSED TIME (t) 95 mins.
 FLOW RATE 1.8 l/min VOLUME (V) 171 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .49 fibers/field

0	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1
SUBTOTALS	9	8	7	12	TOTAL 49

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.49 - .04)}{171} = .52$$

SGP 0008556

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 373

ELAPSED TIME (t) 72 mins.

FLOW RATE ~~7.8~~ 1.7 l/min

VOLUME (V) ~~129~~ 122 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .27 fibers/field

0	1	0	0	0	0
	0	1	0	0	0
	0	0	0	0	1
	1	0	0	0	1
	2	0	0	0	0
	0	0	0	0	0
5	0	1	0	0	1
	0	1	0	0	0
	1	0	0	1	0
	0	0	0	0	0
	0	0	0	0	0
10	0	1	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	1	0	0	0	0
	0	0	0	0	0
15	0	0	1	0	1
	0	0	0	0	1
	0	0	0	0	0
	0	1	0	1	0
	0	0	1	0	1
	0	0	1	0	1
20	0	1	0	0	0
SUBTOTALS	5	8	1	4	6

SGP 0008557

Constant k = $\frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.27 - .04)}{122} = .37$

Date: 4-25-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 371 ELAPSED TIME (t) 58 mins.
 FLOW RATE 1.8 l/min VOLUME (V) 104 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .49 fibers/field

0	1	0	0	1	1
	0	1	1	2	1
	1	0	1	3	1
	1	1	0	0	1
	1	1	1	2	1
	1	1	1	1	1
5	0	1	1	1	0
	1	0	0	1	0
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	2	1
	0	1	0	1	1
	1	1	0	1	1
	1	1	3	1	1
15	0	0	0	1	1
	0	1	1	0	1
	1	1	0	1	1
	1	1	1	1	1
	0	1	1	1	1
20	1	1	1	1	1
SUBTOTALS	7	5	1	14	1

SGP 0008558

Constant $k = \frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.49 - .04)}{104} = .86$

Date: 4-25-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 357

ELAPSED TIME (t) 94 mins.

FLOW RATE 1.70 l/min

VOLUME (V) 160 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .31 fibers/field

0	0	0	1	1
	0	1	0	0
	1	0	0	1
	1	1	0	0
	0	0	0	0
	0	1	0	0
5	0	0	0	1
	0	0	1	0
	0	1	0	0
	0	1	0	0
	0	1	0	0
	0	1	1	0
10	1	1	2	0
	1	0	0	0
	0	0	0	0
	0	1	0	0
15	1	0	0	0
	0	0	0	0
	1	0	0	0
	1	0	0	1
	1	0	2	0
20	1	0	2	0

SUBTOTALS 7 8 5 7 4 TOTAL 31

Constant $k = \frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.31 - .04)}{160} = .33$

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 357 ELAPSED TIME (t) 120 mins.
 FLOW RATE 1.70 l/min VOLUME (V) 204 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) 04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .44 fibers/field

0	0	0	1	0	0
	2	1	0	0	0
	0	1	1	0	0
	1	1	0	0	1
	0	0	0	1	1
5	0	0	2	1	0
	1	0	1	1	0
	1	0	1	1	0
	0	1	0	1	3
	1	0	2	0	1
	1	1	1	0	0
10	0	0	1	1	0
	1	1	0	0	0
	0	0	1	1	0
	1	0	0	1	0
15	0	0	0	1	1
	0	0	1	0	0
	0	0	1	0	0
	0	0	0	1	0
	1	0	0	0	1
20	9	6	11	10	8
SUBTOTALS					TOTAL <u>44</u>

SGP 0008560

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.44 - .04)}{204} = .39$$

Date: 4-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 367 ELAPSED TIME (t) 147 mins.
 FLOW RATE 1.70 l/min VOLUME (V) 250 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .23 fibers/field

0	1	1	2	1	1
	1		1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1
SUBTOTALS	3	4	5	3	3
					TOTAL <u>.23</u>

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.23 - .04)}{250} = .15$$

SGP 0008561

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 362 ELAPSED TIME (t) 108 mins.
 FLOW RATE 1.70 l/min VOLUME (V) 184 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .47 fibers/field

0	1	0	C	1	2
	C	2	C	C	C
	1	1	1	1	5
	C	C	C	1	C
	1	C	C	C	C
	1	0	C	1	
5	1	C	2	C	1
	1	C	1	C	0
	0	C	C	1	1
	1	1	C	1	C
	1	C	1	C	1
10	C	C	1	2	C
	1	C	C	C	C
	C	0	C	1	1
	C	0	1	2	0
15	0	0	2	0	1
	C	C	1	0	C
	C	2	1	C	1
	C	1	1	C	C
	C	1	C	C	1
20					
SUBTOTALS	16	8	12	16	7
					TOTAL <u>47</u>

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.47 - .04)}{184} = .46$$

SGP 0008562

Date: 4-28-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 31-1-E.A.

ELAPSED TIME (t) _____ mins.

FLOW RATE _____ l/min

VOLUME (V) _____ liters

FIELD AREA (a) _____ mm²

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .04 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL 1

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

SGP 0008563

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 127 ELAPSED TIME (t) 60 mins.
 FLOW RATE 1.75 l/min VOLUME (V) 105 liters
 FIELD AREA (a) 30432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .56 fibers/field

0	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
5	1	2	2	2
	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
10	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
15	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
	1	1	1	1
20	1	1	1	1
SUBTOTALS	7	11	15	10

SGP 0008564

Constant $k = \frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.56 - .04)}{105} = .9$

Date: 5-9-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 2 ELAPSED TIME (t) 40 mins.
 FLOW RATE 1.78 l/min VOLUME (V) ~~70~~ 68 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .50 fibers/field

0	1	2	1	2	2
	1	2	1	2	2
	1	2	1	2	2
	1	2	1	2	2
	1	2	1	2	2
5	1	1	0	2	
	1	1	0	2	2
	1	1	0	2	1
	1	1	0	2	1
	1	1	0	2	1
10	1	1	0	2	1
	1	1	0	2	1
	1	1	0	2	1
	1	1	0	2	1
15	1	1	0	2	1
	1	1	0	2	1
	1	1	0	2	1
	1	1	0	2	1
	1	1	0	2	1
20	1	1	0	2	1

SUBTOTALS

TOTAL 198

Constant $k = \frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.50 - .04)}{68} = \frac{198 \times .46}{68} = \frac{91.08}{68} = 1.34$

SGP 0008565

Date: 7/25/88

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 300 ELAPSED TIME (t) 97 mins.
 FLOW RATE 2.0 l/min VOLUME (V) 194 liters
 FIELD AREA (a) 1.00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .60 fibers/field

0	2	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

TOTAL

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.60 - .04)}{194} = .57$$

SGP 0008566

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 25 ELAPSED TIME (t) 138 mins.
 FLOW RATE 2.0 l/min VOLUME (V) 276 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .39 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL 198

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.39 - .04)}{276} = .25$$

SGP 0008567

Date: Feb 21 1966

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 21 ELAPSED TIME (t) 92 mins.
FLOW RATE 2.0 l/min VOLUME (V) 184 liters
FIELD AREA (a) 100432 mm² BLANK COUNT (b) .04 fibers/field
FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .46 fibers/field

0	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

TOTAL

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.46 - .04)}{184} = .4$$

SGP 0008568

Date: 11-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 01-1 ELAPSED TIME (t) 74 mins.
 FLOW RATE 2.0 l/min VOLUME (V) 148 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .54 fibers/field

0	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

TOTAL 21

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.54 - .04)}{148} = .67$$

SGP 0008569

Date: 4-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 355 ELAPSED TIME (t) 51 mins.
 FLOW RATE 2.0 l/min VOLUME (V) 102 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .15 fibers/field

0	0	1	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
5	1	0	0	0	0
	0	0	1	0	0
	0	0	1	0	0
	0	0	0	0	0
	0	0	0	0	0
10	1	0	0	0	0
	0	0	0	1	0
	0	0	0	0	0
	0	0	0	0	0
15	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	1	0	0	0	0
	0	0	0	0	0
20	0	0	1	0	0
SUBTOTALS	3	2	5	1	4

SGP 0008570

Constant $k = \frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.15 - .04)}{102} = .21$

Date: 11-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 257 ELAPSED TIME (t) 103 mins.
 FLOW RATE 1.75 l/min VOLUME (V) 180 liters
 FIELD AREA (a) 10432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .42 fibers/field

0		1			1
	1				
				1	
				1	
5					
		1		1	
				1	
				1	
10					
					2
15					
20					

SUBTOTALS

TOTAL 198

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.42 - .04)}{180} = .42$$

SGP 0008571

Date: 4-25-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 0 ELAPSED TIME (t) 120 mins.
 FLOW RATE 1.75 l/min VOLUME (V) 210 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) 1.23 fibers/field

0	3	1	1	1	1
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
5	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
10	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
15	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
	1	1	1	1	
20	1	1	1	1	

SUBTOTALS

TOTAL

$$\text{Constant } k = \frac{A}{1000 a} = 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (1.23 - .04)}{210} = 1.12$$

SGP 0008572

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 274 ELAPSED TIME (t) 80 mins.
 FLOW RATE 1.75 l/min VOLUME (V) 140 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .35 fibers/field

0	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
SUBTOTALS	7	8	9	8	7
					TOTAL <u>35</u>

SGP 0008573

Constant $k = \frac{A}{1000 a} = 198$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.35 - .04)}{140} = .44$