MARIETTA AIRBORNE ASBESTOS SURVEY

Lab Copy

4/8/75

PLAINTIFF'S EXHIBIT

GP-2075

SGP 0022197

Mr. R. V. Favero — Marietta

G. W. Green — Tigard

AIRBORNE ASBESTOS SURVEY OF MARIETTA JOINT SYSTEM PLANT — April 25, 1975

cc: Mr. J. R. Ward - Portland
Mr. H. W. Poole - Wilmington
Mr. E. S. Hollingsworth - Wilmington
Mr. G. F. Fowler - Marietta

On April 8, 1975, the Marietta joint cement plant was monitored for asbestos dust by George Fowler. The filters were then sent to Tigard for counting. All the time weighted averages were below the 5.0 fiber/ml maximum currently in effect. A total of 23 samples were taken. Five representative workers were sampled during an entire work shift and, in addition, environmental samples were taken at various locations throughout the plant.

The highest individual sample of 7.2 fibers/ml, and the highest time weighted average of 3.0 fibers/ml were on Larry James at the dry blender. Second was Herman Dodd on the wet mixer with a time weighted average of 1.7 fibers/ml. All the others were under one fiber/ml.

Sample No. 59 on Larry James was not counted because of an excess of dust. Large quantities of mica and other materials obscured the asbestos fibers making it impossible to make an accurate count. The reason for the high dust level on this particular filter was due to the length of time (3 hrs., 38 mins.) it was collecting dust. The other four samples shared a period of four hours. The time weighted average is based on this four-hour period. It is reasonable to assume that this period which was from 7:08 a.m. to 11:08 a.m. was representative of a full days operation. In the future we should limit the sample time on the dry blender mem to 60 minutes maximum. This will require seven or eight filters. Some of the others sampled, such as the foreman, can be eliminated or just spot checked with one sample. The two areas at Marietta which need full sample coverage are the dry blender and the ready mix mixer.

G. W. G.

GWG:elz

Enclosures

MARIETTA, GEORGIA, JOINT CEMENT PLANT
AIRBORNE ASBESTOS DUST SURVEY

Date Sampled: April 8, 1975

Name	Location or Job Title	Time Weighted Average Count fibers/ml	Filter No.	Elapsed Time (minutes)	Individual Count fibers/ml
V. A. Tinker	Foreman	0.32	63	153.5	0.15
			66	179.0	0.42
			73	129.0	0.38
W. Potter	Lidder & Stacker	0.74	62	165.0	0.58
			70	180.0	0.76
			71	122.0	0.91
S. J. Gayton	Lidder, Stacker & Fork Truck Driver	0.33	61	161.0	0.12
			54	185.0	0.50
			68	121.0	0.40
H. G. Dodd	Ready Mix Wet Mixer	1.70	51	155.0	1.80
			56	189.0	1.40
			69	119.0	2.80
. G. James	Dry Mixer	3.00	64	64.0	1.30
			52	30.5	7.20
			65	111.0	3.10
			72	33.0	1.80
			59	218.0	not counted
Area Samples	Wet Mixer		67	67.0	1.30
	Wet Mixer		58	49.5	0.50
	Dry Blender		57	70.0	2.00
	Dry Blender		74	32.0	2.00
	Warehouse		53	208.0	0.13
	Office		60	121.0	0.04

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Larry G. James

Title DRY mixer

Date 4/8/75

Pump Serial No. B-06-0288

Sampled by George Fowler

Signature George Fowler

LOCATION	DRY Mix Area - Lab Area	Same	SAME	SAME	
Sample No.	64	52	65	72	59
FLOW: Pump Setting	6	6	6	6	6
Liter/min (R)	1.7	1.7	1.7	1.7	1.7
TIME: On	7:08	8:12.5	8:44	10:35	11:08
Off	8:12	8:43	10:35	11:08	* 3:16
ELAPSED TIME (min) (t)	64	30.5	111	33	218
VOLUME, Liters (t x r)	109	52	189	56.1	370.6
REMARKS	MAN wears mask while Dumping RAW MATLS" Dumped 2 BATCHES DURING	1 BATCH Dumped		1 Batch Dumped	* Lunch Break 30 min. Pump off.
CONCENTRATION (F) fibers/ml	This filter 1.3	7.2	3.1	1.8	TOO MUCH DUST TO COUNT

Total Sample Time (T) 238.5 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1F_1) + (t_2\ _2) + (t_3F_3) + \ldots}{T}$$

$$\frac{64(1.3) + [illegible](7.2) + [illegible]3.1 + [illegible]}{238.5}$$

$$\frac{83.2 + 219.6 + [illegible] - 59.4}{238.5}$$

$$= \boxed{3.0}$$

SGP 0022200

Date: 4/17/87

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 64 | ELAPSED TIME (t) 64 mins.

FLOW RATE 1.7 l/min | VOLUME (V) 109 liters

FIELD AREA (a) .00432 mm^2 | BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2 | AV. FIBER COUNT (f) .87 fibers/field

0	–	–	3	–	–
	–	–	–	–	1
	–	–	3	1	–
	1	3	2	–	–
	2	–	1	–	–
5	2	–	–	–	3
	2	–	1	–	–
	–	–	–	1	1
	–	1	2	–	1
	2	1	1	2	2
10	2	1	–	1	2
	1	–	1	1	1
	2	2	2	5	1
	1	1	1	1	1
15	–	1	1	–	2
	1	1	2	1	–
	1	1	–	1	2
	–	1	–	1	1
20	–	2	–	1	1
SUBTOTALS	17	15	20	16	19

TOTAL 87

Constant $k = \frac{A}{1000\ a}$ 197

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ 197 $\frac{(.87 - .15)}{109}$ = 1.31

SGP 0022201

Date: 4/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 52

ELAPSED TIME (t) 30.5 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 52 liters

FIELD AREA (a) .00432 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 2.04 fibers/field

0	4	—	—	—	2
	2	2	6	2	2
	2	—	2	2	1
	2	2	2	4	1
	4	1	2	—	1
5	1	3	4	1	1
	1	2	6	1	—
	4	6	1	2	4
	6	3	1	2	3
	2	1	4	2	1
10	4	1	2	2	2
	2	1	—	1	—
	1	4	2	1	1
	1	—	4	2	3
15	—	2	2	—	—
	4	6	2	4	2
	2	6	1	2	—
	2	4	2	2	4
20	2	4	1	6	2
SUBTOTALS	46	48	44	36	30

TOTAL 204

SGP 0022202

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

Fiber Concentration (F) = $\frac{k\ (f-b)}{V} = \frac{198\ (2.04 - .15)}{52} = 7.2$

Date: 4/22/15

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 65

ELAPSED TIME (t) 111 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 151 liters

FIELD AREA (a) .00433 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 3.1 fibers/field

0	2	5	6		
	4	2	7		
	4	1	4		
	5	1	4		
	2	5	6		
5	2	2	3		
	5	2	3		
	1	5	5		
	1	4	2		
	4	2	1		
10	1	7	2		
	2	3	2		
	2	4	2		
	3	2	1		
15	1	4	2		
	4	3	3		
	4	2	4		
	2	7	2		
	6	2	7		
20					
SUBTOTALS	55	63	65		TOTAL 186

SGP 0022203

Constant k = $\frac{A}{1000\ a}$ 195

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 195 (3.1 - .15) / 151 =

Date: 4/[illegible]/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 72

ELAPSED TIME (t) _____ mins.

FLOW RATE 1.7 l/min

VOLUME (V) 56.1 liters

FIELD AREA (a) .00432 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .66 fibers/field

0	–	1	–	–	1
	–	–	1	1	1
	3	–	1	–	–
	–	–	1	–	–
5	2	1	2	–	–
	1	–	1	1	–
	1	1	–	2	1
	1	–	2	2	2
	1	–	–	–	–
10	–	–	1	1	–
	1	1	–	–	1
	–	1	–	–	2
	–	1	1	–	–
15	1	1	1	1	–
	–	–	1	–	1
	–	–	3	–	–
	1	2	–	–	1
	–	3	1	–	1
20	2	–	2	2	1
SUBTOTALS	12	12	18	10	12

TOTAL 64

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ $\frac{198\ (.66-.15)}{56.1} = 1.8$

SGP 0022204

Date: 4/22/75

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 59

ELAPSED TIME (t) 21[illegible] mins.

FLOW RATE 1[illegible] 1/min

VOLUME (V) 370.6 liters

FIELD AREA (a) [illegible]32 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) * fibers/field

0	4				
	4				
	7				
	3				
	2				
5	2				
	3				
	6				
	6				
	5				
10					
15					
20					

SUBTOTALS

TOTAL

SGP 0022205

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

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

* [illegible]

Blank

Date: 1/30/12

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 55

ELAPSED TIME (t) Blank mins.

FLOW RATE 1/min

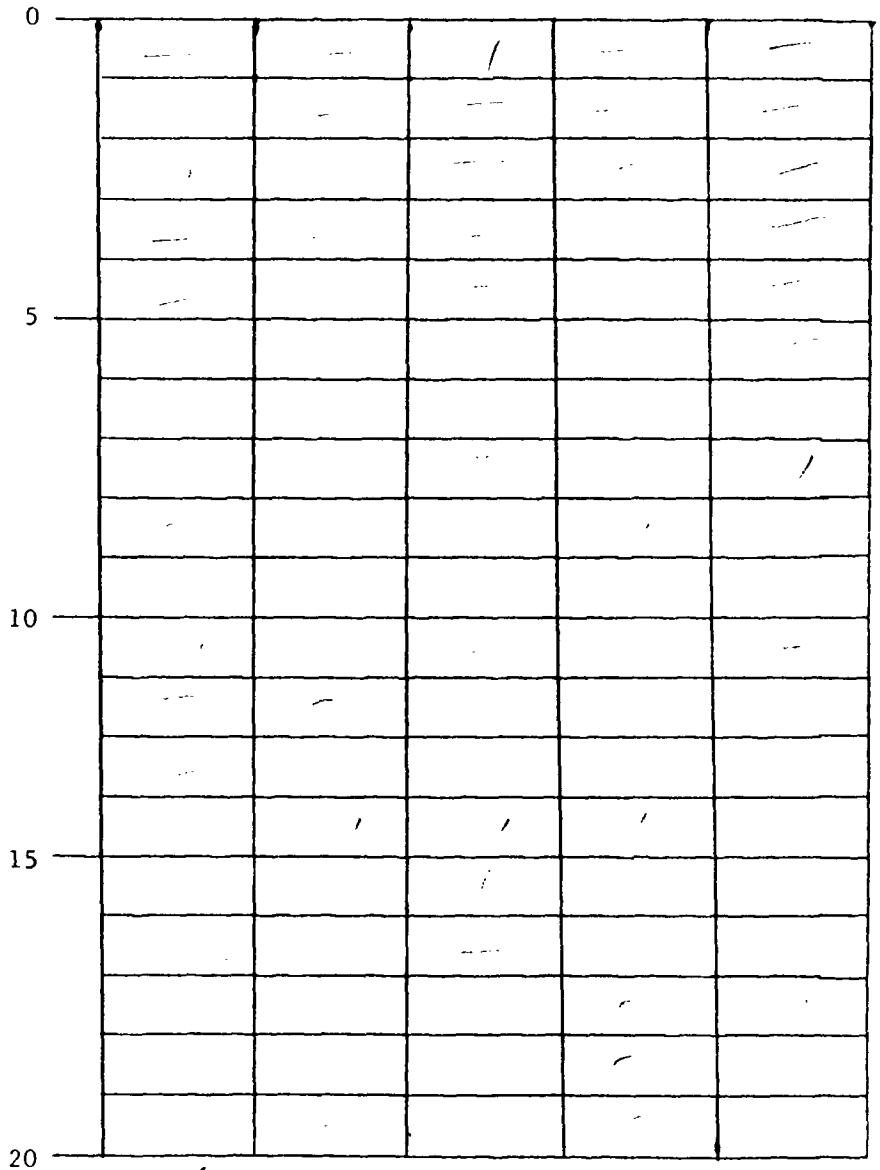
VOLUME (V) 0 liters

FIELD AREA (a) mm^2

BLANK COUNT (b) fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .19 fibers/field



SUBTOTALS 4 3 2 5 2

TOTAL 16

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

Av. Blank = 1.17.12 = .11

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

SGP 0022206

Blank

Date: 1/17

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 75

ELAPSED TIME (t) _____ mins.

FLOW RATE _____ l/min

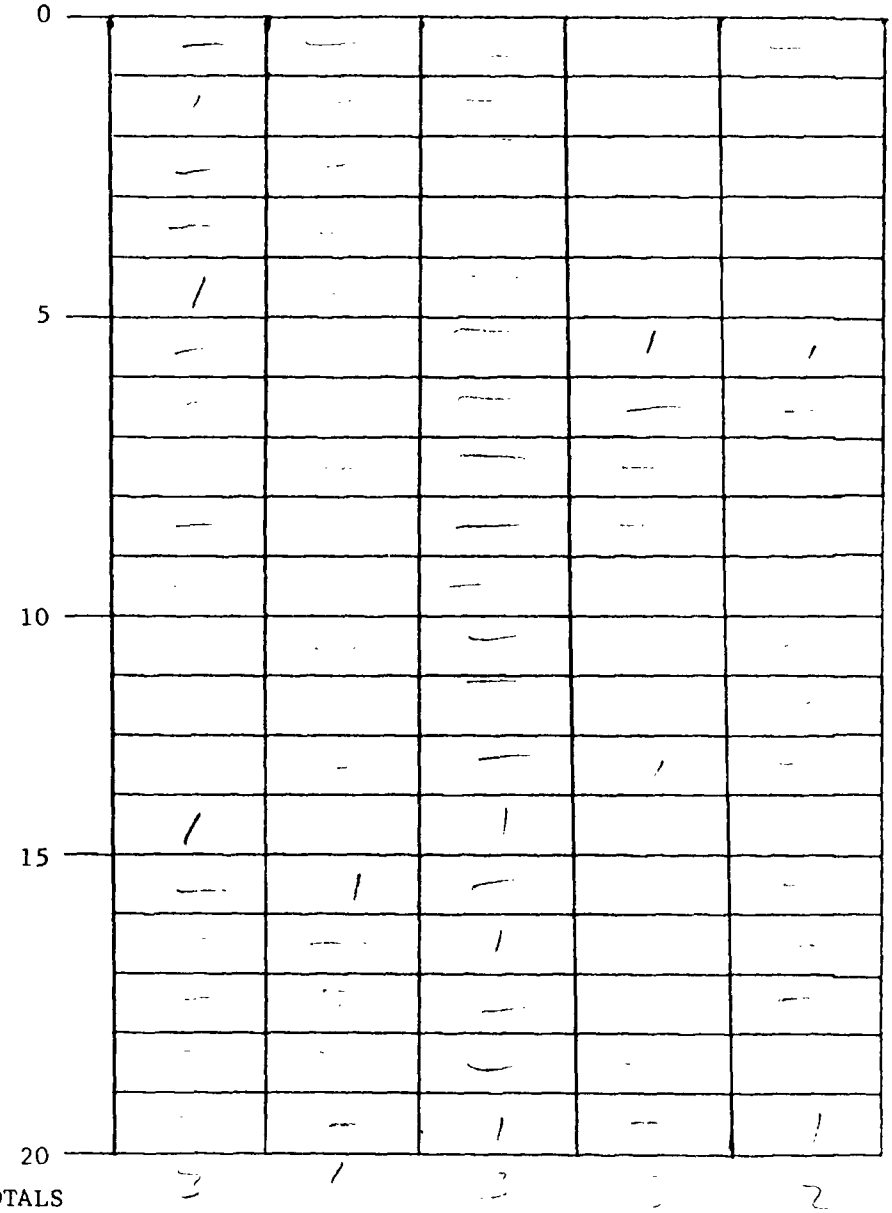
VOLUME (V) — liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) — fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .12 fibers/field



SUBTOTALS 3 1 3 — 2 TOTAL 12

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

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

SGP 0022207

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Valton A. Tinker

Title Forman

Date 4/8/75

Pump Serial No. B-06-0444

Sampled by George Fowler

Signature George Fowler

LOCATION	ALL AREAS	SAME	SAME		
FILTER NO.	63	66	73		
FLOW: Pump Setting	6	6	6		
Liter/min (R)	1.75	1.75	illegible		
TIME: On	7:16.5	9:49	1:18		
Off	9:49	*1:18	3:27		
ELAPSED TIME (min) (t)	153	179	129		
VOLUME, Liters (t x r)	269	313	226		
REMARKS		Pump off 30 min lunch Break			
CONCENTRATION (F) fibers/ml	.15	.42	.38		

Total Sample Time (T) 461.5 mins.

Time Weight Av. Concentration = $\frac{(t_1F_1) + (t_2\ _2) + (t_3F_3) + \ldots}{T}$

(153.5 x .15) + (179 x .42) + (129 x .38)

23.0 + 75.2 + 49 = .32

SGP 0022208

Date: 4/3/79

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 73

ELAPSED TIME (t) 121 mins.

FLOW RATE 1.87 l/min

VOLUME (V) 226 liters

FIELD AREA (a) .00132 mm^2

BLANK COUNT (b) 115 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .58 fibers/field

0	—	—	—	—	—
	1	—	1	—	1
	—	1	2	1	2
	1	1	2	2	4
	—	—	—	—	—
5	—	—	2	1	—
	—	—	—	—	—
	1	—	—	—	—
	1	1	—	1	—
	—	—	1	—	1
10	1	—	—	2	1
	—	—	3	—	1
	1	1	2	1	—
	—	1	1	—	2
15	1	—	—	—	1
	—	1	—	—	—
	—	1	2	—	—
	—	—	—	—	3
	—	2	—	—	2
20					
SUBTOTALS	7	9	16	8	18

TOTAL 58

SGP 0022209

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ 1.38

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 66 | ELAPSED TIME (t) 179 mins.

FLOW RATE 1.7 l/min | VOLUME (V) 313 liters

FIELD AREA (a) .00432 mm^2 | BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2 | AV. FIBER COUNT (f) .82 fibers/field

0	1	—	—	1	1
	1	—	—	1	—
	—	—	—	2	—
	2	—	—	—	3
	1	—	—	—	1
5	1	1	—	—	1
	—	1	—	—	1
	—	2	1	—	—
	—	—	1	2	—
	1	—	2	—	2
10	1	—	—	—	2
	2	—	2	—	—
	—	—	—	—	1
	1	2	4	—	1
15	2	1	—	—	2
	5	1	—	3	1
	—	3	1	1	—
	1	3	2	1	—
20	1	2	3	1	—
SUBTOTALS	26	13	16	12	16

TOTAL 82

SGP 0022210

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V} = \frac{198(.82-.15)}{313} = .42$

Date: _____

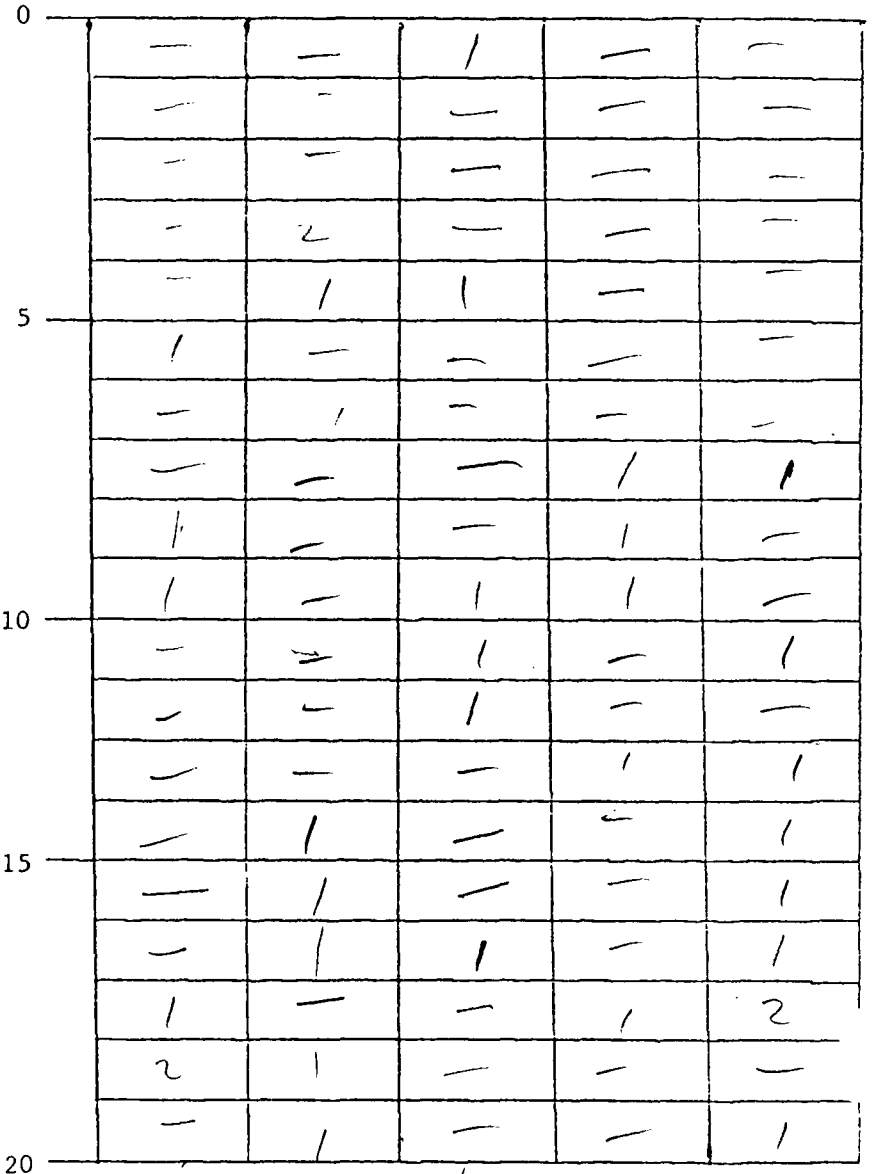
ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 63 — ELAPSED TIME (t) 1525 mins.

FLOW RATE 1.7 l/min — VOLUME (V) 269 liters

FIELD AREA (a) .00432 mm^2 — BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2 — AV. FIBER COUNT (f) .35 fibers/field



SUBTOTALS 9 6 5 9 TOTAL 35

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

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ $\frac{198(.35-.15)}{269}$ = .15

SGP 0022211

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Willmon Potter

Title Lidder & Stacker

Date 4/8/75

Pump Serial No. B-08-0490

Sampled by George Fowler

Signature George Fowler

LOCATION	Lid placing operation	same	same		
Sheet No.	69	70	71		
FLOW: Pump Setting	6	6	6		
Liter/min (R)	1.7	1.7	1.7		
TIME: On	7:05	9:50	1:20		
Off	9:50	* 1:20	3:22		
ELAPSED TIME (min) (t)	165	150	122		
VOLUME, Liters (t x r)	280	306	207		
REMARKS		Pump off 30 min Lunch Break			
CONCENTRATION (F) fibers/ml	.58	.76	.91		

Total Sample Time (T) 467 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1F_1) + (t_2\ 2) + (t_3F_3) + \ldots}{T}$$

165 x .58 = 95.7 + 136.8 = 232.5

467

95.7 + 136.8 + 232.5 = .74

SGP 0022212

Date: 4/21/75

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 62 | ELAPSED TIME (t) 165 mins.

FLOW RATE 1.7 l/min | VOLUME (V) 2.81 liters

FIELD AREA (a) .1122 mm^2 | BLANK COUNT (b) 115 fibers/field

FILTER AREA (A) 855 mm^2 | AV. FIBER COUNT (f) 195 fibers/field

0	2	2	1	2	2
	1	2	1	2	—
	1	1	—	—	—
	—	1	—	—	—
5	2	—	—	—	2
	1	—	2	1	4
	1	—	—	1	4
	—	1	3	—	4
	—	1	4	—	2
	—	—	3	3	1
10	1	2	2	5	1
	2	—	4	2	—
	1	2	1	—	—
	—	—	1	—	1
15	—	—	2	—	1
	—	—	2	—	—
	—	—	—	—	—
	1	—	2	—	1
20	1	—	—	—	1
SUBTOTALS	17	16	28	16	24

TOTAL 98

SGP 0022213

Constant $k = \frac{A}{1000\ a} = 195$

Fiber Concentration $(F) = \frac{k\ (f-b)}{V} = \frac{195\ (.9 - .115)}{2.81} = .55$

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 7.)

ELAPSED TIME (t) [illegible] mins.

FLOW RATE 1.7 l/min

VOLUME (V) [illegible] liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) [illegible] fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 1.32 fibers/field

0	1	2	1	2	—
	—	2	1	—	3
	1	1	2	1	2
	1	1	1	1	—
	2	1	4	—	2
5	1	2	2	3	—
	1	2	4	2	2
	2	1	2	3	4
	1	4	3	1	1
	—	4	1	3	1
10	—	3	2	1	2
	1	3	3	2	1
	2	2	1	—	1
	—	2	3	2	—
15	—	—	1	—	—
	1	—	1	1	1
	1	—	2	2	—
	—	1	3	1	1
20	1	2	—	—	—
SUBTOTALS	16	[illegible]	37	25	21

TOTAL 122

SGP 0022214

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ 190 [illegible] / 306 = 1.76

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 71 — ELAPSED TIME (t) 122 mins.

FLOW RATE 1.7 l/min — VOLUME (V) 207 liters

FIELD AREA (a) .00432 mm^2 — BLANK COUNT (b) .0 fibers/field

FILTER AREA (A) 855 mm^2 — AV. FIBER COUNT (f) 1.10 fibers/field

0	1	1	1	1	1
	—	—	—	—	1
	5	2	—	—	—
	2	1	—	3	2
	1	1	1	1	1
5	6	—	2	—	1
	1	2	1	—	1
	3	—	2	//	—
	3	1	—	3	—
	1	—	1	—	2
10	1	—	—	—	1
	1	1	1	6	—
	3	1	—	2	1
	3	1	3	—	2
15	—	—	1	2	1
	1	1	3	2	1
	—	1	1	3	—
	4	—	—	2	—
	—	1	—	2	—
20					
SUBTOTALS	36	16	17	25	15

TOTAL 110

SGP 0022215

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ $198 \frac{1.10 - .15}{207} = .9$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant MARIETTA

Name Sammy J. Gayton

Title Lidder & Stacker

Date 4/2/75

Pump Serial No. B-GG-0165

Sampled by George Fowler

Signature George Fowler

LOCATION	STACKING & DRIVING FORK TRUCK	SAME	SAME		
FILTER NO.	61	54	68		
FLOW: Pump Setting	6	6	6		
Liter/min (R)	2.0	2.0	2.0		
TIME: On	7:06	9:47	1:22		
Off	9:47	* 1:22	3:21		
ELAPSED TIME (min) (t)	161	185	121		
VOLUME, Liters (t x r)	322	370	242		
REMARKS		Pump off 30 min Lunch Break			
CONCENTRATION (F) fibers/ml	.12	.50	.40		

Total Sample Time (T) 467 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1F_1) + (t_2\ _2) + (t_3F_3) + \ldots}{T}$$

$$= \frac{161 \times .12 + 185 \times .5 + 121 \times .4}{467}$$

$$= \frac{19.32 + 92.5 + 48.4}{467} = \frac{160.22}{467} = .343$$

SGP 0022216

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 61

ELAPSED TIME (t) 161 mins.

FLOW RATE 2.0 l/min

VOLUME (V) 322 liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) [illegible] fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .35 fibers/field

2	-	1	-	1
2	-	-	1	1
-	1	-	-	-
-	-	-	-	-
-	-	1	-	-
-	-	-	-	-
-	-	-	-	?
-	1	-	-	-
-	-	-	-	1
-	-	-	1	-
2	-	-	-	1
-	-	-	-	-
1	-	-	-	-
-	-	-	-	-
1	1	-	2	-
-	-	1	-	-
-	1	4	1	-
-	1	-	-	-
-	-	1	-	2
SUBTOTALS [illegible]	5	8	5	7

TOTAL 35

SGP 0022217

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

Fiber Concentration (F) $= \frac{k\ (f-b)}{V} = \frac{198(.35 - [illegible])}{322} = .12$ [illegible]

Date: 4/

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 54 — ELAPSED TIME (t) 185 mins.

FLOW RATE 2.0 l/min — VOLUME (V) 370 liters

FIELD AREA (a) .00432 mm^2 — BLANK COUNT (b) .11 fibers/field

FILTER AREA (A) 855 mm^2 — AV. FIBER COUNT (f) 1.08 fibers/field

0	—	—	3	2	—
	—	—	1	1	2
	3	—	2	—	1
	2	1	—	—	2
	1	1	1	1	3
5	3	—	—	—	2
	—	2	2	3	1
	—	1	1	1	2
	—	1	2	1	2
	2	—	—	—	2
10	2	3	—	5	—
	—	1	1	2	1
	1	—	2	3	2
	3	1	2	—	2
15	1	—	1	1	2
	—	1	1	—	—
	1	1	1	2	—
	1	3	2	1	—
20	1	—	—	1	1
SUBTOTALS	21	16	22	24	20

TOTAL 103

SGP 0022218

Constant k = $\frac{A}{1000\ a}$ = 1.91

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 1.91 $\frac{1.08 - .11}{370}$ = .5

Date: 4/2/

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 68

ELAPSED TIME (t) 120 mins.

FLOW RATE 2.0 l/min

VOLUME (V) 242 liters

FIELD AREA (a) .01432 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .64 fibers/field

0	2	1	2	1	—
	1	—	—	—	1
	—	—	—	3	—
	—	1	1	—	—
	—	1	2	1	—
5	1	1	—	—	2
	—	—	—	1	1
	—	1	2	—	1
	—	—	2	1	—
	—	—	—	2	1
10	1	—	2	1	—
	1	2	2	—	1
	1	—	1	—	—
	—	1	1	1	2
15	—	1	3	—	—
	1	—	—	—	3
	—	1	1	—	—
	—	—	2	1	—
20	—	1	—	—	—
SUBTOTALS	3	11	21	12	12

TOTAL 64

SGP 0022219

Constant k = $\frac{A}{1000\ a}$ 1[illegible]

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 10[illegible] = .40

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Hermon G. Dodd

Title Ready Mix wet mixer

Date 4/6/75

Pump Serial No. B-06-0422

Sampled by George Fowler

Signature George Fowler

LOCATION	Ready Mix Wet Mixer	SAME	SAME		
FILTER NO.	51	56	69		
FLOW: Pump Setting	6	6	6		
Liter/min (R)	1.7	1.7	1.7		
TIME: On	7:10	9:45	1:24		
Off	9:45	*1:24	3:23		
ELAPSED TIME (min) (t)	155	189	119		
VOLUME, Liters (t x r)	263	321	202.3		
REMARKS		*Pump off 30 min Lunch Break			
CONCENTRATION (F) fibers/ml	1.8	1.4	2.8		

Total Sample Time (T) 463 mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1F_1) + (t_2\ _2) + (t_3F_3) + \ldots}{T}$$

$$= \frac{155 \times 1.8, + (\quad \times 1.\quad + (\quad \times \quad}{4\quad}$$

$$= \quad + 261.\quad + \quad$$

$$= 11.7$$

SGP 0022220

Date: 4/24/-5

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 51

ELAPSED TIME (t) 155 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 263 liters

FIELD AREA (a) .00432 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 1.8 fibers/field

0	4	1	4		
	6	4	4		
	2	5	2		
	1	4	1		
	—	5	1		
5	2	1	—		
	2	6	1		
	2	3	1		
	2	4	3		
	5	—	6		
10	3	2	3		
	6	4	3		
	4	2	3		
	5	1	2		
15	1	2	—		
	—	7	2		
	3	—	4		
	3	4	3		
	2	3	2		
20					
SUBTOTALS	53	53	45		TOTAL 156

SGP 0022221

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

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = $\frac{198\ (2.6-.15)}{263}$ 1.8

Date:

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 56

ELAPSED TIME (t) 189 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 321 liters

FIELD AREA (a) .00442 mm^2

BLANK COUNT (b) .05 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 2.40 fibers/field

卌 ll *

* [illegible]

0	4	3	6		
	2	2	2		
	2	2	1		
	4	1	5		
	—	2	3		
5	—	2	4		
	1	7	4		
	1	3	2		
	—	2	2		
	1	2	5		
10	—	2	—		
	5	5	4		
	3	—	2		
	5	1	3		
15	3	5	2		
	1	4	4		
	5	1	2		
	1	3	5		
	—	2	3		
20					
SUBTOTALS	38	47	59		

TOTAL 144

SGP 0022222

Constant $k = \frac{A}{1000\ a}$ 193

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 193 [illegible] / 321 = 1.4

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 69

ELAPSED TIME (t) 117 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 202 liters

FIELD AREA (a) .0422 mm^2

BLANK COUNT (b) [illegible] fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 3.52 fibers/field

0	2	5			
	1	7			
	—	4			
	7	1			
	4	1			
5	3	—			
	2	2			
	5	3			
	5	4			
	—	3			
10	4	4			
	2	1			
	7	2			
	[illegible]	3			
15	4	4			
	1	—			
	5	2			
	4	2			
	2	4			
20					

SUBTOTALS 69 52 TOTAL 121

SGP 0022223

Constant k = $\frac{A}{1000\ a}$ = 1.98

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ [illegible] = 2.[illegible]

AIRBORNE ASBESTOS FIBER SAMPLING

Plant MARIETTA

Name ENVIRONMENT

Title

Date 4/8/75

Pump Serial No. B06-0305

Sampled by George Fowler

Signature George Fowler

LOCATION	Ready Mix WET Mixer	Ready mix WET MIXER	DRY Blender	DRY Blender	Wharehouse
[illegible] NO.	67	58	57	74	53
FLOW: Pump Setting	6	6	6	6	6
Liter/min (R)	1.4	1.3	1.8	1.7	1.?
TIME: On	7:22	8:29.5	9:22	10:32	11:06
Off	8:29	9:19	10:32	11:04	2:34
ELAPSED TIME (min) (t)	67	49.5	70	32	208
VOLUME, Liters (t x r)	121	89.1	126	57.6	374
REMARKS			2 Batches were dumped	1 Batch Dumped	
CONCENTRATION (F) fibers/ml	1.3	.51	2.0	2.0	.13

Total Sample Time (T) _____ mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1F_1) + (t_2\ _2) + (t_3F_3) + \ldots}{T}$$

SGP 0022224

AIRBORNE ASBESTOS FIBER SAMPLING

Plant MARIETTA

Name Environment

Title

Date 4/8/75

Pump Serial No. B06-0305

Sampled by George Fowler

Signature George Fowler

LOCATION	office				
FILTER NO.	60				
FLOW: Pump Setting	6				
Liter/min (R)	1.8				
TIME: On	2.35				
Off	3:36				
ELAPSED TIME (min) (t)	121				
VOLUME, Liters (t x r)	218				
REMARKS					
CONCENTRATION (F) fibers/ml	.04				

Total Sample Time (T) _____ mins.

$$\text{Time Weight Av. Concentration} = \frac{(t_1F_1) + (t_2\ _2) + (t_3F_3) + \ldots}{T}$$

SGP 0022225

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 60

ELAPSED TIME (t) 121 mins.

FLOW RATE ______ l/min

VOLUME (V) 210 liters

FIELD AREA (a) ______ mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .19 fibers/field

0

5

10

15

20

SUBTOTALS

TOTAL 19

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

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

[illegible]

SGP 0022226

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. [illegible]

ELAPSED TIME (t) [illegible] mins.

FLOW RATE 1.8 l/min

VOLUME (V) 121 liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) [illegible] fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 1.41 fibers/field

0	2	2	1	1	3
	1	1	1	4	1
	3	1	3	1	1
	4	1	1	4	—
	—	1	1	2	1
5	1	—	—	1	1
	1	—	1	1	1
	—	1	3	2	1
	1	—	5	1	—
	1	2	1	2	1
10	4	—	3	1	5
	4	2	3	2	1
	1	2	1	4	—
	1	1	4	1	1
15	1	—	2	—	—
	—	2	1	1	2
	1	—	—	4	3
	1	2	1	2	1
	—	2	4	1	—
20					
SUBTOTALS	27	20	36	35	23

TOTAL 141

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

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

SGP 0022227

Date: 4/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 74

ELAPSED TIME (t) 32 mins.

FLOW RATE 1.[illegible] l/min

VOLUME (V) 57.6 liters

FIELD AREA (a) .0032 mm^2

BLANK COUNT (b) 11 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .74 fibers/field

0	1	6	–	–	2
	3	–	2	–	1
	1	1	–	2	–
	–	2	–	–	3
	5	–	1	1	–
5	2	1	1	–	1
	1	–	2	–	–
	–	2	–	1	–
	1	–	–	2	–
	–	–	–	1	–
10	–	–	1	1	–
	1	1	–	1	1
	–	1	1	–	–
	–	–	–	–	1
15	2	1	1	–	2
	–	2	1	1	1
	1	–	–	1	–
	1	1	1	–	–
	1	–	–	2	–
20					
SUBTOTALS	20	19	11	13	12

TOTAL 74

SGP 0022228

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ $1.95 \frac{(.74 - 11)}{57.6}$ 2.0

Date: 4/

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 52

ELAPSED TIME (t) 208 mins.

FLOW RATE 1.2 l/min

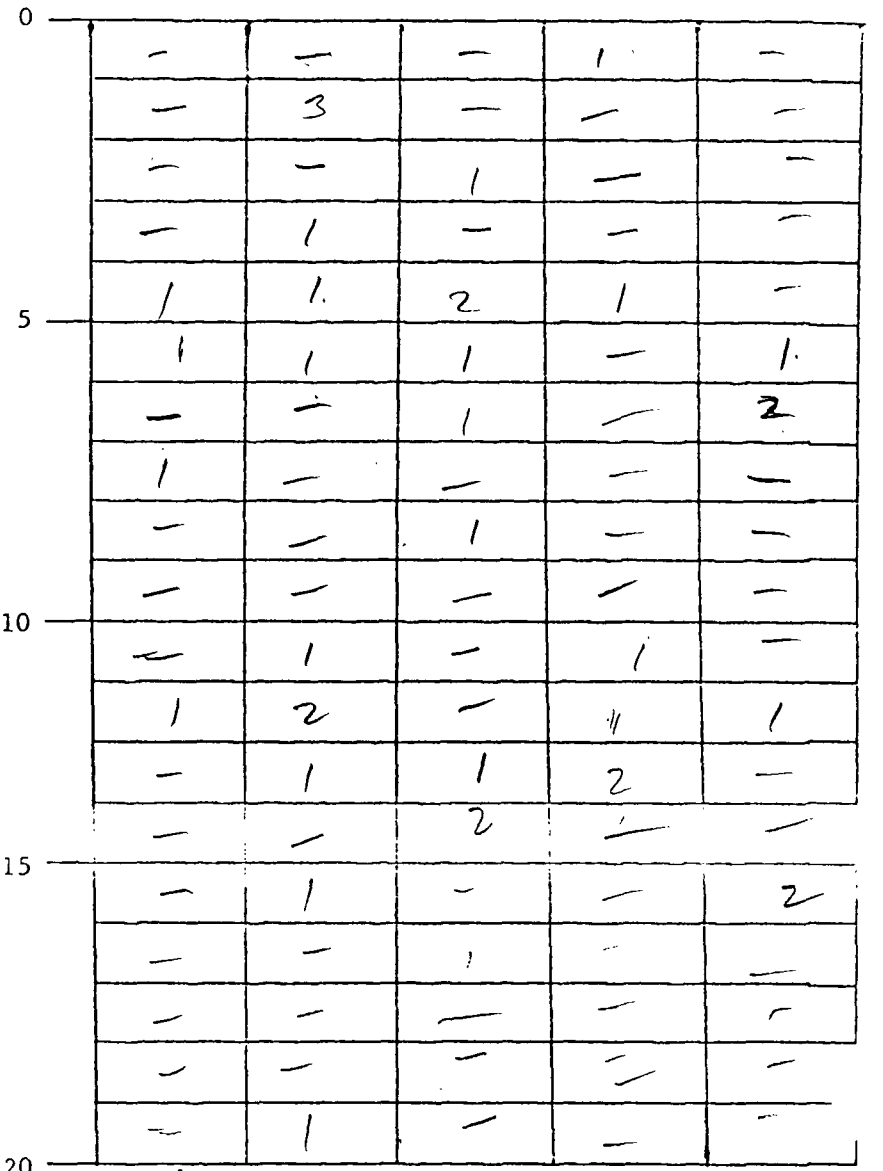
VOLUME (V) 374 liters

FIELD AREA (a) [illegible] mm²

BLANK COUNT (b) .1 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 40 fibers/field



SUBTOTALS	4	12	10	8	6

TOTAL 40

SGP 0022229

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ 195 · 40 - / 374 = 11?

Date: 4 [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 51

ELAPSED TIME (t) 70 mins.

FLOW RATE 1 [illegible] 1/min

VOLUME (V) 126 liters

FIELD AREA (a) [illegible] 2 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 1.43 fibers/field

0	1	1	1	—	1
	1	1	1	1	1
	2	—	1	—	1
	—	1	1	2	4
	2	2	1	2	—
5	2	—	3	—	1
	2	4	—	1	2
	—	2	3	6	—
	—	4	1	—	—
	2	3	—	1	—
10	1	1	—	3	1
	2	4	—	4	2
	3	1	6	3	2
	1	—	2	1	1
15	2	—	—	—	2
	6	—	—	2	2
	6	3	—	4	1
	—	2	1	1	—
20	2	4	2	—	—
SUBTOTALS	36	33	23	31	[illegible] TOTAL 143

SGP 0022230

Constant $k = \frac{A}{1000\ a} = 1.98$

Fiber Concentration $(F) = \frac{k\ (f-b)}{V} = \frac{1.98\ (1.43 - .15)}{126} = 2.0$

Date: _____

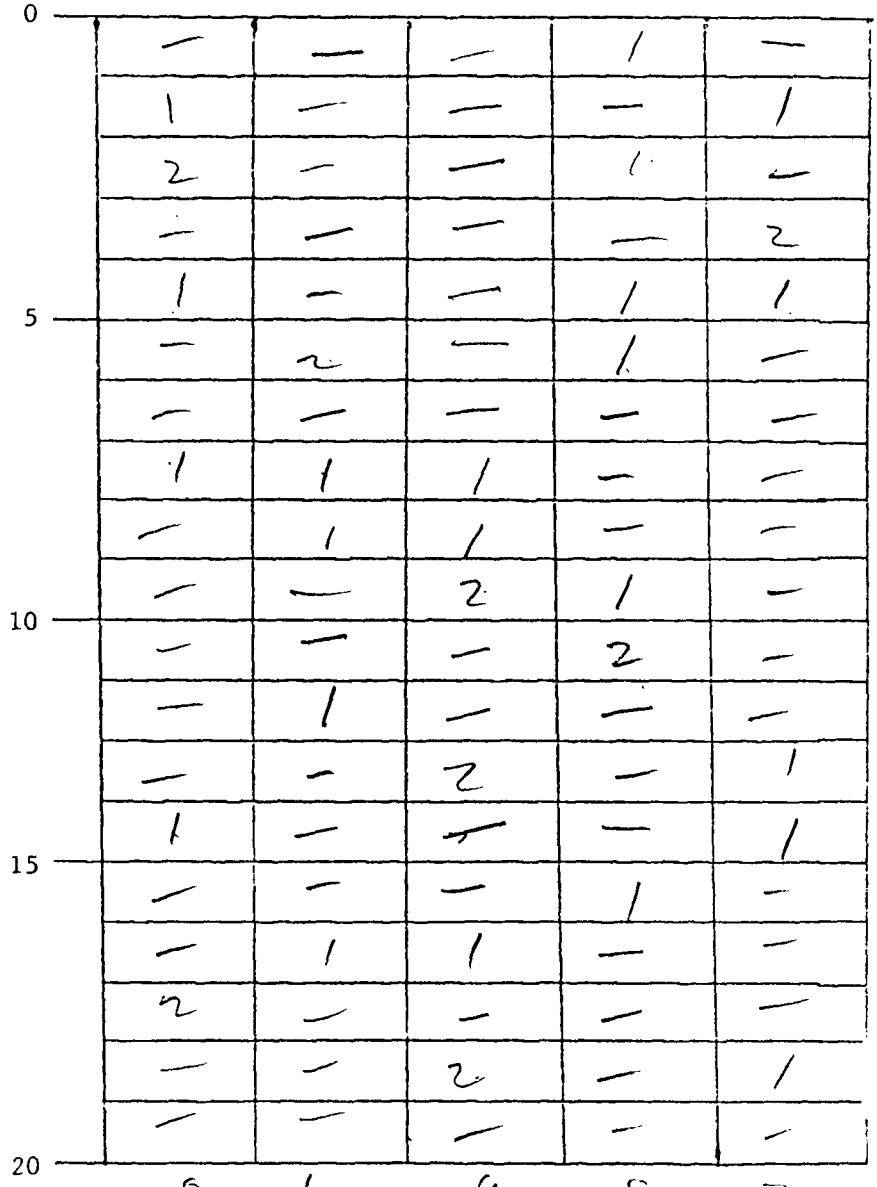
ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 65 | ELAPSED TIME (t) _____ mins.

FLOW RATE 1.8 l/min | VOLUME (V) _____ liters

FIELD AREA (a) .102 mm^2 | BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm^2 | AV. FIBER COUNT (f) .38 fibers/field



	—	—	—	1	—
1	—	—	—	—	1
2	—	—	1	—	—
—	—	—	—	2	
1	—	—	1	1	
—	2	—	1	—	
—	—	—	—	—	
1	1	1	—	—	
—	1	1	—	—	
—	—	2	1	—	
—	—	—	2	—	
—	1	—	—	—	
—	—	2	—	1	
1	—	—	—	1	
—	—	—	1	—	
—	1	1	—	—	
2	—	—	—	—	
—	—	2	—	1	
—	—	—	—	—	
SUBTOTALS	8	6	9	8	7

TOTAL 38

SGP 0022231

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

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = .51