PLAINTIFF'S EXHIBIT

GP-1542

MARIETTA AIRBORNE ASBESTOS SURVE

4/8/75

Lab Copy

SGP 0008006

Mr. R. V. Favero — Marietta

G. W. Green — Tigard

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

cc: Mr. J. R. Hurd - Portland
Mr. H. W. Poole - Wilmington
Mr. E. B. 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 mix 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:els

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 4/3/75

Pump Serial No. B-06-0288

Sampled by George Fowler

Signature George Fowler

LOCATION	DRY Mix Area - Lab Area	Same	SAME	SAME	
S.S.N.	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 This filter	1 BATCH Dumped		1 Batch Dumped	* Lunch Break 30 min. Pump off.
CONCENTRATION (F) fibers/ml	1.3	7.2	3.1	1.8	TOO MUCH TO COUNT

Total Sample Time (T) 2385 mins.

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

64(1.7) + [illegible] x 7.2) + [illegible] 3.1 + x1

2385

82.24 219.6 + [illegible] - 59.4

2385

= 3.0

SGP 0008009

Date: 4/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 64

ELAPSED TIME (t) 64 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 10[illegible] liters

FIELD AREA (a) .00432 mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .[illegible] 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
	—	2	—	1	1
20					
SUBTOTALS	17	15	20	16	19

TOTAL 87

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

Fiber Concentration (F) $= \frac{k\ (f-b)}{V}$ = 1[illegible] $\frac{[illegible]}{100}$ = 71.31

SGP 0008010

Date: -/-

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
	2	4	1	6	2
20					
SUBTOTALS	46	48	44	36	30

TOTAL 204

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

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

SGP 0008011

Date: 4/22/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 65

ELAPSED TIME (t) 111 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 1.51 liters

FIELD AREA (a) .0432 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	3		
15	1	4	2		
	4	3	3		
	4	2	4		
	2	7	2		
	6	2	7		
20					
SUBTOTALS	55	63	68		

TOTAL 186

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

Fiber Concentration (F) $= \frac{k\ (f-b)}{V}$ = 198(3.1 - [illegible]) / 1.5[illegible] = [illegible]

SGP 0008012

Date: 4/3/9

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

TOTAL 62

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

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

Date: 4/22/75

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 59 | ELAPSED TIME (t) 21[illegible] mins.

FLOW RATE 1[illegible] l/min | VOLUME (V) 370.6 liters

FIELD AREA (a) [illegible] 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

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

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

* [illegible]

Bl...

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 55

ELAPSED TIME (t) Bl... mins.

FLOW RATE _____ l/min

VOLUME (V) 0 liters

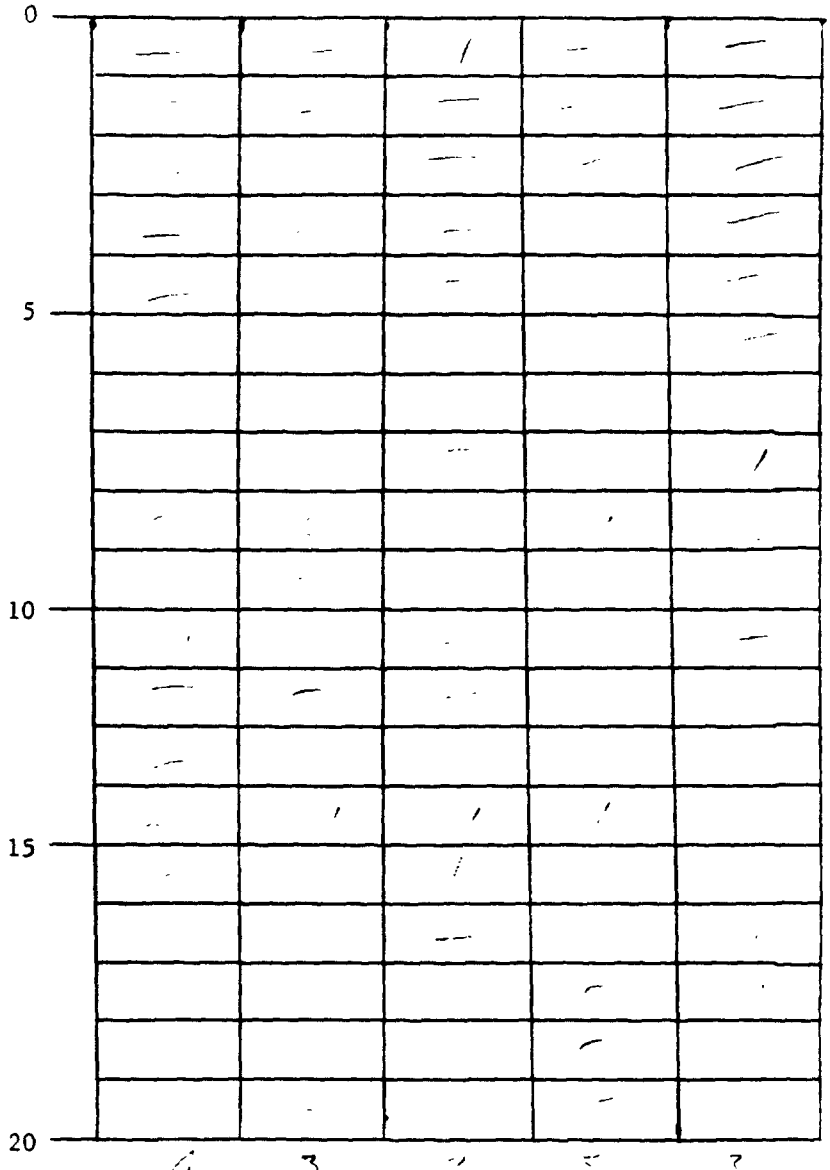
FIELD AREA (a) _____ mm^2

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) [illegible] fibers/field

0					
	—	—	/	—	—
	—	—	—	—	—
	—		—	—	—
	—		—		—
	—		—		—
5					—
			—		/
	—			—	
		—			
10					—
	—	—	—		
	—				
	—	/	/	/	
15	—		/		
			—		—
				—	—
				—	
		—		—	
20					
SUBTOTALS	4	3	3	5	3



TOTAL 1F

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

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

Av. Blank [illegible]

[illegible] = [illegible]

SGP 0008015

Blank

Date: 1/17

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 75

ELAPSED TIME (t) _____ mins.

FLOW RATE _____ l/min

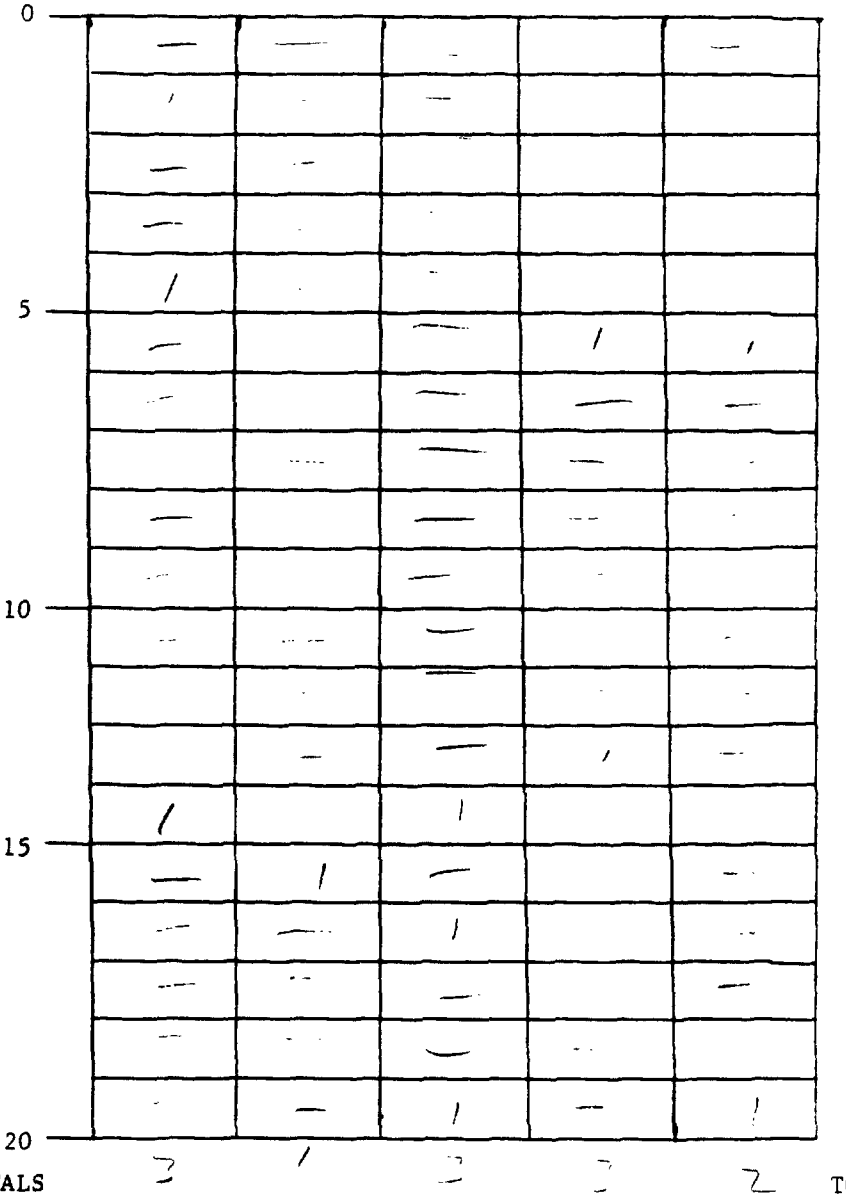
VOLUME (V) — liters

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 3 2 TOTAL 12

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

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

SGP 0008016

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Valton A. Tinker

Title Foreman

Date 4/8/75

Pump Serial No. B-CG-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	1.75		
TIME: On	7:16.5	9:49	1:18		
Off	9:49	*1:18	3:27		
ELAPSED TIME (min) (t)	153.5	179	129		
VOLUME, Liters (t x r)	269	312	226		
REMARKS		Pump off 30 min lunch Break			
CONCENTRATION (F) fibers/ml	.15	.42	.38		

Total Sample Time (T) 461.5 mins.

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

$$\frac{(153.5 \times .15) + (179 \times .42) + (129 \times .38)}{461.5}$$

$$\frac{23.0 + 75.2 + 49}{461.5} = .32$$

SGP 0008017

Date: 4/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 73

ELAPSED TIME (t) 121 mins.

FLOW RATE 1.[illegible] l/min

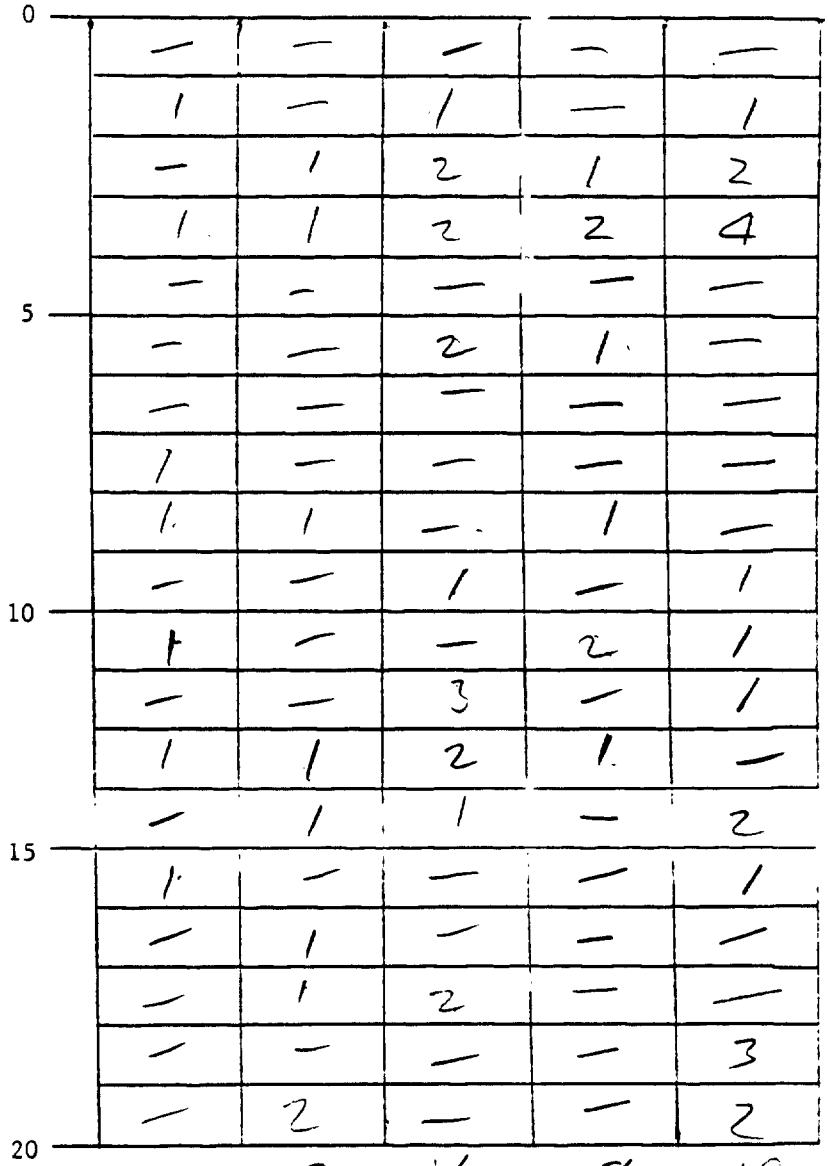
VOLUME (V) 226 liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) .15 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

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ 198 [illegible] = .38

SGP 0008018

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 66 | ELAPSED TIME (t) 120 mins.

FLOW RATE 17 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	20	13	16	12	16

TOTAL 82

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

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = $\frac{.198(.82-.15)}{313}$ = .0004

SGP 0008019

Date: _____

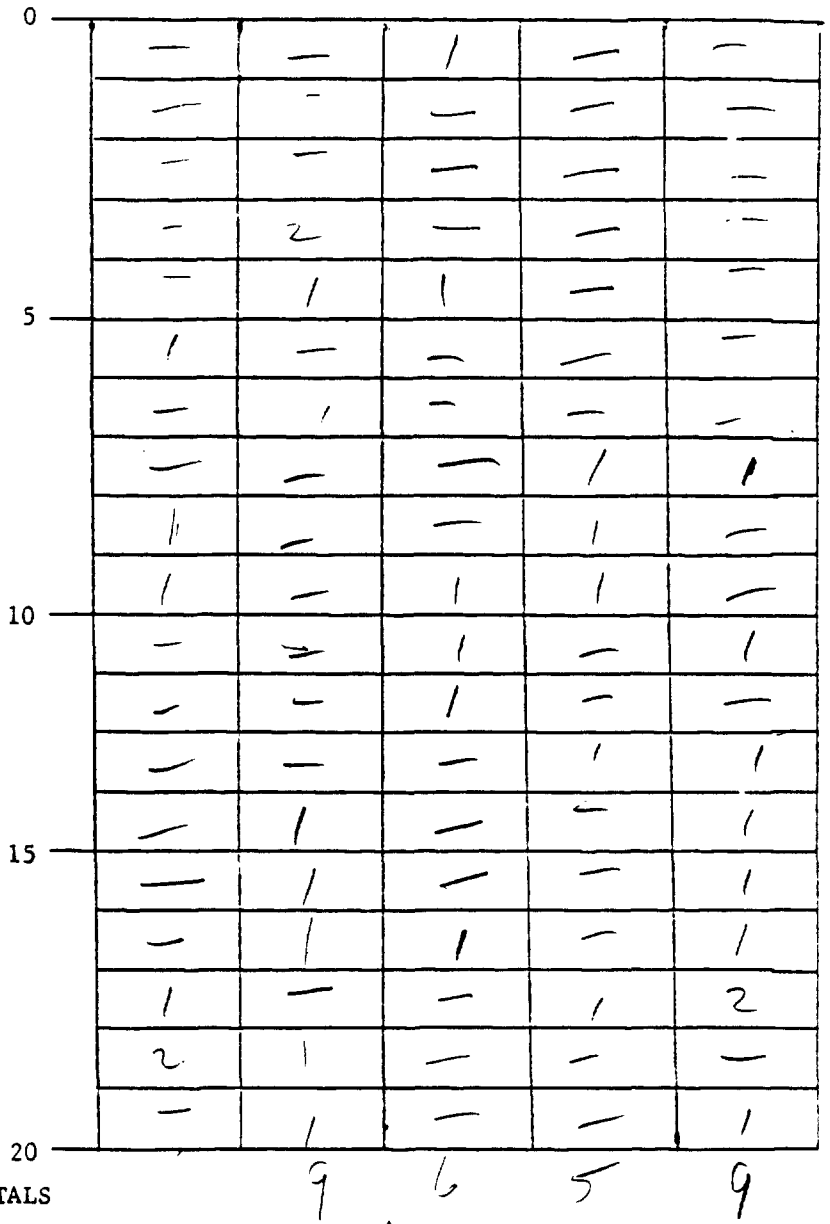
ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 63 — ELAPSED TIME (t) 15[illegible] mins.

FLOW RATE 1[illegible] l/min — VOLUME (V) 269 liters

FIELD AREA (a) .00[illegible] 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 $(F) = \frac{k\ (f-b)}{V}$ $\frac{198(.35-.15)}{269} = .15$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Willmon Potter

Title Lidder & Stacker

Date 4/8/75

Pump Serial No. B-CE-C490

Sampled by George Fowler

Signature George Fowler

LOCATION	Lid placing operation	Same	Same		
Sheet No.	62	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	180	122		
VOLUME, Liters (t x r)	2[illegible]	306	207		
REMARKS		Pump off 30 min Lunch Break			
CONCENTRATION (F) fibers/ml	.58	.76	.91		

Total Sample Time (T) 467 mins.

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

765 × .[illegible] = [illegible]

467

95.7 + 136.8 + [illegible] = .74

SGP 0008021

Date: 4/2[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 62

ELAPSED TIME (t) 165 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 2[illegible]1 liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) 115 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 19[illegible] fibers/field

0	2	2	1	2	2
	1	2	1	2	—
	1	1	—	—	—
	—	1	—	—	—
	2	—	—	—	2
5	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
	1	—	—	—	1
20					
SUBTOTALS	14	16	28	16	24

TOTAL 98

Constant $k = \frac{A}{1000\ a}$ = 19[illegible]

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ = $\frac{195\ (.9[illegible] - [illegible])}{2[illegible]1}$ = .5[illegible]

SGP 0008022

Date: [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 7[illegible]

ELAPSED TIME (t) [illegible] mins.

FLOW RATE 1.[illegible] 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
	1	2	—	—	—
20					
SUBTOTALS	16	[illegible]	37	25	21

TOTAL 132

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

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

$198 \frac{1.32 - [illegible]}{306} = \boxed{.71}$

SGP 0008023

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) [illegible] mm² — BLANK COUNT (b) .1 fibers/field

FILTER AREA (A) 855 mm² — 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	11	—
	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	—
20	—	1	—	2	←
SUBTOTALS	36	14	17	28	15

TOTAL 110

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ $198\ \frac{1.10-.1}{207} = 1.0$

SGP 0008024

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Sammy J. Gayton

Title Lidder & Stacker

Date 4/8/75

Pump Serial No. B-06-0165

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.[illegible]	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.

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

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

$$= \frac{14.[illegible] + [illegible] + [illegible]}{467} = \boxed{.[illegible]}$$

SGP 0008025

Date: 4/[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) 1 fibers/field

FILTER AREA (A) 855 mm^2

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

0	2	–	1	–	1
	2	–	–	1	1
	–	1	–	–	–
	–	–	–	–	–
	–	–	1	–	–
5	–	–	–	–	–
	–	–	–	–	?
	–	1	–	–	–
	–	–	–	–	1
	–	–	–	1	–
10	2	–	–	–	1
	–	–	–	–	–
	1	–	–	–	–
	–	–	–	–	–
15	1	1	–	2	–
	–	–	1	–	–
	–	1	4	1	–
	–	1	–	–	–
20	–	–	1	–	2
SUBTOTALS	2	5	8	5	7

TOTAL 35

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

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = $\frac{198\ (.35 - 1)}{322}$ = [illegible]

SGP 0008026

Date: 4/-

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 54 — ELAPSED TIME (t) 105 mins.

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

FIELD AREA (a) [illegible] mm² — BLANK COUNT (b) [illegible] fibers/field

FILTER AREA (A) 855 mm² — 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	27

TOTAL 108

Constant k = $\frac{A}{1000\ a}$ = 1.93

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 1.93 $\frac{1.08 - [illegible]}{370}$ = .5[illegible]

SGP 0008027

Date: 4/21

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 68

ELAPSED TIME (t) 1:11 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	8	11	21	12	12

TOTAL 64

Constant k = $\frac{A}{1000\ a}$ 19

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 19 [illegible] = .40

SGP 0008028

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Marietta

Name Herman G. Dodd

Title Ready Mix wet mixer

Date 4/8/75

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.

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

$$= \frac{155 \times 1.8, + (\quad + \quad + \quad}{463}$$

$$= \frac{\quad + 261.4 + \quad}{463}$$

$$= 11.7$$

SGP 0008029

Date: 4/24/95

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		
20	2	3	2		
SUBTOTALS	53	53	45		TOTAL 156

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) 1 [illegible] mins.

FLOW RATE 1.7 l/min | VOLUME (V) 321 liters

FIELD AREA (a) [illegible] mm² | BLANK COUNT (b) [illegible] fibers/field

FILTER AREA (A) 855 mm² | AV. FIBER COUNT (f) 2.40 fibers/field

HH II *

* [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	39	47	59		

TOTAL 144

Constant k = $\frac{A}{1000\ a}$ · 19.3

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ = 19.8 [illegible] = [illegible]

SGP 0008031

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 69 | ELAPSED TIME (t) 117 mins.

FLOW RATE 17 l/min | VOLUME (V) 202 liters

FIELD AREA (a) .0227 mm^2 | BLANK COUNT (b) 1.5 fibers/field

FILTER AREA (A) 855 mm^2 | AV. FIBER COUNT (f) 3.02 fibers/field

0	2	5			
	1	7			
	—	4			
	7	1			
	4	1			
5	2	—			
	2	2			
	5	3			
	5	4			
	—	3			
10	4	4			
	2	1			
	7	2			
	8	3			
15	4	4			
	1	—			
	5	2			
	4	2			
20	2	4			
SUBTOTALS	69	52			TOTAL 121

Constant k = $\frac{A}{1000\ a}$ = 1.97

Fiber Concentration (F) = $\frac{k\ (f-b)}{V}$ 1.97 (3.02 − 1.5) / 202 = 2.0

SGP 0008032

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]	67	58	57	74	53
FLOW: Pump Setting	6	6	6	6	6
Liter/min (R)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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.

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

[illegible]

SGP 0008033

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Willrich #4 — Date 4/8/75

Name Environment — Pump Serial No. BC6-C305

Title _____ — 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 0008034

Date: 4/ /

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 60

ELAPSED TIME (t) 12/ mins.

FLOW RATE _____ l/min

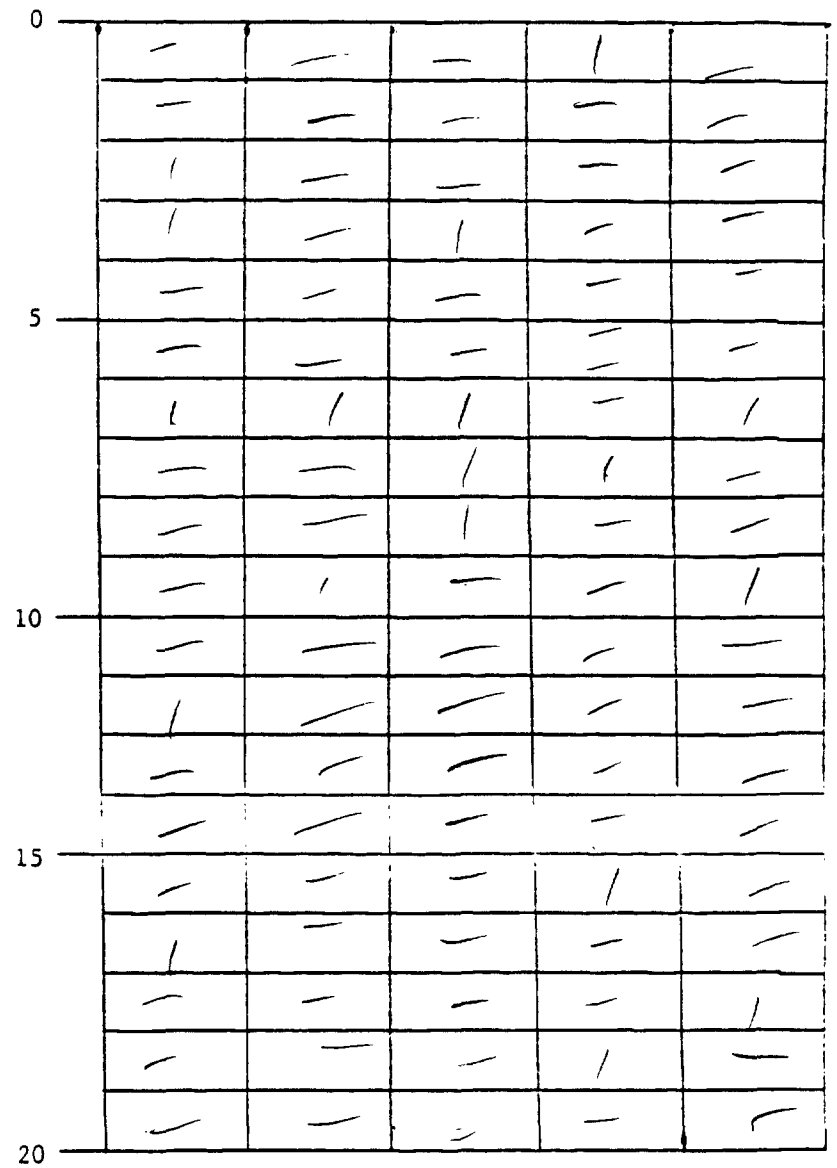
VOLUME (V) 210 liters

FIELD AREA (a) _____ mm^2

BLANK COUNT (b) .15 fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) .17 fibers/field



SUBTOTALS

TOTAL 19

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

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

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
	7	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) $= \frac{k\ (f-b)}{V} = \frac{[illegible]}{121} = [illegible]$

SGP 0008036

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) [illegible]32 mm^2

BLANK COUNT (b) [illegible] 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	18	11	13	12

TOTAL 74

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ $1.85 \frac{(.74 - .15)}{57.}$ 2.0

SGP 0008037

Date: 4/[illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 52

ELAPSED TIME (t) 208 mins.

FLOW RATE 1.[illegible] l/min

VOLUME (V) 374 liters

FIELD AREA (a) [illegible] mm^2

BLANK COUNT (b) .[illegible] fibers/field

FILTER AREA (A) 855 mm^2

AV. FIBER COUNT (f) 40 fibers/field

0	–	–	–	1	–
	–	3	–	–	–
	–	–	1	–	–
	–	1	–	–	–
	1	1	2	1	–
5	1	1	1	–	1
	–	–	1	–	2
	1	–	–	–	–
	–	–	1	–	–
	–	–	–	–	–
10	–	1	–	1	–
	1	2	–	1	1
	–	1	1	2	–
	–	–	2	–	–
15	–	1	–	–	2
	–	–	1	–	–
	–	–	–	–	–
	–	–	–	2	–
	–	1	–	–	–
20					
SUBTOTALS	4	12	10	8	6

TOTAL 40

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ $196 \frac{.40 - [illegible]}{374} = .13$

SGP 0008038

Date: 4 [illegible]

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 51 | ELAPSED TIME (t) 70 mins.

FLOW RATE 1 [illegible] l/min | VOLUME (V) 126 liters

FIELD AREA (a) [illegible] mm^2 | BLANK COUNT (b) [illegible] 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	3
	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	20

TOTAL 143

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

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

SGP 0008039

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 63 | ELAPSED TIME (t) _____ mins.

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

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

FILTER AREA (A) 855 mm^2 | AV. FIBER COUNT (f) .28 fibers/field

0	—	—	—	1	—
	1	—	—	—	1
	2	—	—	1	—
	—	—	—	—	2
	1	—	—	1	1
5	—	2	—	1	—
	—	—	—	—	—
	1	1	1	—	—
	—	1	1	—	—
	—	—	2	1	—
10	—	—	—	2	—
	—	1	—	—	—
	—	—	2	—	1
	1	—	—	—	1
15	—	—	—	1	—
	—	1	1	—	—
	2	—	—	—	—
	—	—	2	—	1
20	—	—	—	—	—
SUBTOTALS	8	6	9	8	7

TOTAL 38

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

Fiber Concentration $(F) = \frac{k\ (f-b)}{V}$ 198 [illegible] = .5

SGP 0008040