PLAINTIFF'S EXHIBIT UC-1080

PROJECT NO. _____

INDUSTRIAL HYGIENE EVALUATION AND SURVEY

Date 9-28-71 Time 2:30/PM Project - ASBESTOS STUDY

Department MAINTENANCE Location INSULATION SHOP Bldg. No. 216

Requested by DR. JOINER Reason _____

General Conditions: SAWING KAYLO - SOUTH BREEZE - 85°F

TWO PORTABLE FLOOR FANS - VACUUM HOOD OVER SAW BLADE

AND VACUUM UNDER SAW TABLE. BOTH MEN WEARING DUST

RESPIRATORS

Sampling Method and Equipment MILLIPORE FILTER 0.8μ PORE SIZE

MICRON AIRE PERSONAL SAMPLER

Shift: Day ✓ Eve. ___ Mid ___ No. Employees 2 Sampled by DED - CWP

Sample Number	Zone	Sampling Time-Min.	Flow Rate	CONCENTRATION		
1	BREATHING	15 MIN 20 SEC.	1.8 LPM	8 FIBERS > 5μ/ML.		
2	"	14 MIN	1.8 LPM	LESS THAN 1 FIBER > 5μ/ML.		

Special Conditions

CORUNDUM BLADE SAW WITH OVERHEAD EXHAUST HOOD STACKING "EXPANDED" ASBESTOS, SAWING KAYLO INTO 2"x3" STRIPS

1. CHARLIE WERN - PUSHING MATERIAL INTO SAW — MOST DUST WHICH ESCAPES HOOD GOES BEHIND THE SAW BLADE.

2. BILL MURFF - STANDING ON OPPOSITE SIDE OF SAW - RECEIVING STRIPS AND STACKING THEM IN A BOX.

Remarks:

Sketch - See Reverse Side. Reference No. _____ Analyzed by DED - CWP Date 9-29-71

UCTC 10955

INDUSTRIAL HYGIENE DEPARTMENT

ASBESTOS DUST STUDY

Department INSULATORS Bldg. 45 Date 10-4-71 Time 8 °°/AM

Sampled By: CPERRY Analyzed By: C. PERRY Method: 38C-29X4-R1

General Conditions: (JOE BURKE) TEARING OUT OLD INSULATION ON 3 MANHEADS AND 1 VALVE ON #1 HYDROGENATOR. MANHEAD COVERS WERE SLICED OFF WITH A KNIFE AND REMOVED INTACT (NOT MUCH VISIBLE DUST) VALVE INSULATION WAS REMOVED WITH A KNIFE AND WAS DUSTIER THAN THE MANHEADS. 12 MINUTES SPENT ON MANHEADS — 3 MINUTES - VALVE.

FIBER COUNT (Fibers > 5μ in Length)

	Slide 1		Slide 2	
1	4	11 1	3	1
2	1	12 1	2	1
3	3	13 2	1	2
4	1	14 0	1	1
5	1	15 0	1	2
6	2	16 1	2	2
7	2	17 2	1	1
8	2	18 1	1	1
9	1	19 2	1	2
10	2	20 2	0	1
Total	31	Avg. 1.55	Total 27	Avg. 1.35

CALCULATIONS

SAMPLE VOLUME: 15 Min. @ 1.8 LPM = 27.0 LITERS

$$\frac{(\text{Avg.Fiber Count}-\text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(1.55 - 0)(885)}{(0.01496)(27.0)(1000)} =$ 3.4 Fibers per Milliliter > 5μ

2. $\frac{(1.35 - 0)(885)}{(0.01496)(27.0)(1000)} =$ 3.0 Fibers per Milliliter > 5μ

Special Conditions: RAINY WEATHER — VALVE AND 1 MANHEAD WERE REMOVED BEFORE IT BEGAN TO RAIN — 2 MANHEADS REMOVED DURING MISTY RAIN.

Remarks:

UCTC 10956

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-4-71 Time 1:15 PM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 38C-29X4-R1

General Conditions: (C.P. HALL)
SAWING KAYLO-20 PIPE INSULATION - SOUTH BREEZE BLOWING ANY DUST AWAY FROM OPERATOR

FIBER COUNT (Fibers > 5Å in Length)

Slide 1				Slide 2			
1		11		1		11	
2		12		2		12	
3		13		3		13	
4		14		4		14	
5		15		5		15	
6		16		6		16	
7		17		7		17	
8		18		8		18	
9		19		9		19	
10		20		10		20	
Total		Avg.		Total		Avg.	

CALCULATIONS

SAMPLE VOLUME: 9.5 Min. @ 1.8 LPM = 17.1 LITERS

$$\frac{(\text{Avg.Fiber Count} - \text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5Å$$

1. $\frac{(\quad - \quad)(\quad)}{(\quad)(\quad)(1000)} =$ < 1 Fibers per Milliliter > 5Å

2. $\frac{(\quad - \quad)(\quad)}{(\quad)(\quad)(1000)} =$ < 1 Fibers per Milliliter > 5Å

Special Conditions:

Remarks:

UCTC 10957

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-4-71 Time 1:45 PM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 38C-29X9-R1

General Conditions: (C.P. HALL)
SAWING JOHNS-MANVILLE THERMOBESTOS PIPE INSULATION
12" X 1½" ON BAND SAW

FIBER COUNT (Fibers > 5μ in Length)

Slide 1				Slide 2			
1		11		1		11	
2		12		2		12	
3		13		3		13	
4		14		4		14	
5		15		5		15	
6		16		6		16	
7		17		7		17	
8		18		8		18	
9		19		9		19	
10		20		10		20	
Total		Avg.		Total		Avg.	

CALCULATIONS

SAMPLE VOLUME: 19 Min. @ 1.8 LPM = 34.2 LITERS

$$\frac{(\text{Avg.Fiber Count}-\text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(\quad - \quad)(\quad)}{(\quad)(\quad)(1000)} =$ < 1 Fibers per Milliliter > 5μ

2. $\frac{(\quad - \quad)(\quad)}{(\quad)(\quad)(1000)} =$ < 1 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10958

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-4-71 Time 2 15/pm

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 38C-29X4-R1

General Conditions: (C.P. HALL)
SAWING JOHNS-MANVILLE PIPE INSULATION - BAND SAW
12" X 1½"

FIBER COUNT (Fibers > 5μ in Length)

Slide 1				Slide 2			
1		11		1		11	
2		12		2		12	
3		13		3		13	
4		14		4		14	
5		15		5		15	
6		16		6		16	
7		17		7		17	
8		18		8		18	
9		19		9		19	
10		20		10		20	
Total		Avg.		Total		Avg.	

CALCULATIONS

SAMPLE VOLUME: 12 Min. @ 1.8 LPM = 21.6 LITERS

$$\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol. Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(\quad - \quad)(\quad)}{(\quad)(\quad)(1000)} =$ < 1 Fibers per Milliliter > 5μ

2. $\frac{(\quad - \quad)(\quad)}{(\quad)(\quad)(1000)} =$ < 1 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10959

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-6-71 Time 9 00/AM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 39C-29X1-R1

General Conditions: (C.P. HALL)
CUTTING KAYLO-10 20"X1½" ON THE BAND SAW.
SAW BLADE OPENING SLOT WAS COVERED WITH MASKING TAPE FOR SET-UP PURPOSES DURING PART OF SAMPLING TIME CAUSING A PARTIAL SHUTOFF TO THE VACUUM BELOW THE SAW BLADE.

FIBER COUNT (Fibers > 5μ in Length)

	Slide 1		Slide 2	
1	4	11	1	2
2	1	12	4	4
3	1	13	2	2
4	4	14	1	0
5	5	15	1	1
6	11	16	2	1
7	3	17	1	2
8	2	18	2	4
9	3	19	2	0
10	2	20	2	2
Total	58	Avg.	2.90	Total 47 Avg. 2.35

CALCULATIONS

SAMPLE VOLUME: 12 Min. @ 1.8 LPM = 21.6 LITERS

$$\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol. Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(2.90 - 0)(885)}{(0.01496)(21.6)(1000)} =$ 7.9 Fibers per Milliliter > 5μ

2. $\frac{(2.35 - 0)(885)}{(0.01496)(21.6)(1000)} =$ 6.4 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10960

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-6-71 Time 9:30 AM

Sampled By: C. PERRY Analyzed By: C PERRY Method: 38C-29X4-R1

General Conditions: (C.P. HALL)
CUTTING KAYLO-10 20" x 1½" USING THE BAND SAW

FIBER COUNT (Fibers > 5μ in Length)

Slide 1				Slide 2			
1	1	11	0	1	1	11	0
2	0	12	0	2	0	12	2
3	0	13	1	3	0	13	0
4	1	14	0	4	8	14	0
5	0	15	0	5	1	15	0
6	1	16	1	6	0	16	0
7	1	17	0	7	0	17	1
8	0	18	0	8	0	18	0
9	0	19	1	9	1	19	0
10	2	20	0	10	0	20	0
Total	9	Avg.	0.45	Total	14	Avg.	0.7

CALCULATIONS

SAMPLE VOLUME: 16 Min. @ 1.8 LPM = 28.8 LITERS

$$\frac{(\text{Avg.Fiber Count}-\text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(0.45 - 0)(885)}{(0.01496)(28.8)(1000)} =$ 0.9 Fibers per Milliliter > 5μ

2. $\frac{(0.7 - 0)(885)}{(0.01496)(28.8)(1000)} =$ 1.4 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10961

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-6-71 Time 1:50 PM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 38C-29X4-R1

General Conditions: (CP. HALL)
CUTTING JOHNS-MANVILLE PIPE INSULATION + KAYLO-10 BLOCKS 16" - 18" - 29"
USING BAND SAW

FIBER COUNT (Fibers > 5μ in Length)

Slide 1				Slide 2			
1	2	11	0	1	4	11	1
2	0	12	0	2	0	12	0
3	0	13	3	3	0	13	0
4	1	14	0	4	1	14	1
5	2	15	1	5	0	15	1
6	0	16	0	6	0	16	0
7	0	17	0	7	1	17	0
8	1	18	2	8	0	18	0
9	3	19	0	9	0	19	1
10	0	20	0	10	1	20	0
Total	15	Avg.	0.75	Total	11	Avg.	0.55

CALCULATIONS

SAMPLE VOLUME: 15 Min. @ 1.8 LPM = 27.0 LITERS

$$\frac{(\text{Avg.Fiber Count} - \text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(0.75 - 0)(885)}{(0.01496)(27.0)(1000)} =$ 1.6 Fibers per Milliliter > 5μ

2. $\frac{(0.55 - 0)(885)}{(0.01496)(27.0)(1000)} =$ 1.2 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10962

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-6-71 Time 2:30 PM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 38C-29X4-R1

General Conditions: (C. P. HALL)
SAWING JOHNS-MANVILLE PIPE INSULATION USING BAND SAW
SIZES 16" - 18" - 24"

FIBER COUNT (Fibers > 5μ in Length)

Slide 1		Slide 2	
1 3	11 0	1 0	11 0
2 0	12 0	2 0	12 0
3 0	13 0	3 0	13 0
4 0	14 0	4 0	14 0
5 1	15 0	5 0	15 1
6 0	16 0	6 0	16 0
7 0	17 0	7 0	17 0
8 0	18 0	8 1	18 1
9 1	19 1	9 0	19 0
10 0	20 0	10 1	20 1
Total 6	Avg. 0.3	Total 4	Avg. 0.2

CALCULATIONS

SAMPLE VOLUME: 16.25 Min. @ 1.8 LPM = 27.45 LITERS

$$\frac{(\text{Avg.Fiber Count}-\text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(0.3 - 0)(885)}{(0.01496)(27.45)(1000)} =$ 0.6 Fibers per Milliliter > 5μ

2. $\frac{(0.2 - 0)(885)}{(0.01496)(27.45)(1000)} =$ 0.4 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10963

INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-7-71 Time 8:30 AM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 58C-29X4-R1

General Conditions: (C. P. HALL)

SAWING KAYLO-10 BLOCKS ON BAND SAW - 4 MIN

" " " " ON TABLE SAW - 11 MIN

FIBER COUNT (Fibers > 5μ in Length)

Slide 1				Slide 2			
1	2	11	5	1	0	11	0
2	2	12	0	2	3	12	0
3	0	13	1	3	0	13	0
4	3	14	0	4	0	14	1
5	2	15	0	5	1	15	0
6	0	16	1	6	0	16	0
7	2	17	4	7	2	17	1
8	0	18	0	8	4	18	0
9	1	19	0	9	0	19	2
10	2	20	1	10	0	20	0
Total	24	Avg.	1.20	Total	14	Avg.	0.70

CALCULATIONS

SAMPLE VOLUME: 15 Min. @ 1.8 LPM = 27.0 LITERS

$$\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol. Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(1.20 - 0)(885)}{(0.01496)(27.0)(1000)} =$ 2.6 Fibers per Milliliter > 5μ

2. $\frac{(0.7 - 0)(885)}{(0.01496)(27.0)(1000)} =$ 1.5 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10964

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INDUSTRIAL HYGIENE DEPARTMENT
ASBESTOS DUST STUDY

Department INSULATORS Bldg. 216 Date 10-7-71 Time 8:47 AM

Sampled By: C. PERRY Analyzed By: C. PERRY Method: 38C-29X9-R1

General Conditions: (C.P. HALL)
SAWING KAYLO-10 BLOCKS ON TABLE SAW

FIBER COUNT (Fibers > 5μ in Length)

	Slide 1		Slide 2	
1	0	11 0	0	0
2	0	12 0	0	0
3	5	13 0	1	0
4	0	14 0	0	7
5	0	15 2	0	0
6	0	16 0	0	0
7	0	17 0	0	0
8	1	18 0	0	0
9	0	19 0	0	0
10	0	20 0	3	0
Total	8	Avg. 0.4	11	Avg. 0.55

CALCULATIONS

SAMPLE VOLUME: 8 Min. @ 1.8 LPM = 14.4 LITERS

$$\frac{(\text{Avg.Fiber Count}-\text{Avg.Blank Count})(\text{Total Filter Area})}{(\text{Counting Area})(\text{Vol.Air-Liters})(1000)} = \text{Concentration, Fibers per Milliliter} > 5\mu$$

1. $\frac{(0.4 - 0)(885)}{(0.01496)(14.4)(1000)} =$ 1.6 Fibers per Milliliter > 5μ

2. $\frac{(0.55 - 0)(885)}{(0.01496)(14.4)(1000)} =$ 2.3 Fibers per Milliliter > 5μ

Special Conditions:

Remarks:

UCTC 10965