
INDUSTRIAL HYGIENE REPORT

BI ANNUAL ASBESTOS STUDY
CELL SERVICE BLOCK 56
LOUISIANA DIVISION

FILE NO. LAD-IH-79.05

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CHECKED *Chas. H. Hylton*

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SUMMARY

The asbestos in air monitoring in the Cell Service Block 56 has been completed for the first half of 1979. Survey results were satisfactory and below the acceptable threshold limit value of 2 fibers per cubic centimeter.

Survey results indicated that Personnel exposures at both Cell Service and the Ramsay Scarlett warehouse storage facility were acceptable and below the threshold limit value. The area monitoring results were also satisfactory in both locations.

Good housekeeping, strict safe operating procedures, and a constant vigil for problem areas are most important considerations for a successful abatement program. Employees should be informed of the survey results and review the consequences of overexposure to asbestos fibers. (See attachment 2.)

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INTRODUCTION

The required asbestos in air monitoring for the first half of 1979 has been completed. The survey, performed twice annually, serves to protect the workers against overexposure to asbestos and fulfills the requirements of the Federal Occupational Safety and Health Act.

DISCUSSION

The Cell Service Block is roughly divided into five areas. These five areas are cleaning, asbestos recovery, assembly line, asbestos drawing system, and the administrative areas.

The used cells arriving in the block to be recycled are first sent to the cleaning area on the north end of the Cell Building. The cells are placed in the soak pits to soften. Later, the cathodes are removed and sent to the cathode washer to be waterblasted and washed clean.

The asbestos waste from the cathode washer pit and the Cell Service Building recovery ditches is pumped through a clarifier to a filtering system to collect the asbestos which is then transported to a designated landfill area and buried. Any overflow that finds its way to the settling pond, located at the extreme north end of the block, is periodically cleaned out and carried to the landfill to be buried. The water is reclaimed and reused in the block.

The cell frame assemblies are placed on the assembly line. (The assembly line extends approximately three-fourths the length and along the eastern half of the building.) The cell frame assembly moves from north to south down the assembly line while necessary repairs are completed. Later, the cathodes and anodes are assembled and the cells are completed.

Newly washed cathodes, acceptable for recycling, are moved to the asbestos drawing system to be coated with asbestos and dried in the ovens before returning to the assembly lines. The asbestos drawing system consists of pumps, lines, vessels, and a drawing vat which is located on the west side of the building. The cathode drawing vat is located inside the building next to the asbestos storage room. The asbestos room also contains the debagger system which opens the bags and dumps the asbestos into the closed slurry mix tank. This room is kept locked at all times by supervision unless work is in progress. Only necessary people are admitted into the area and respirator protection is required. A strict housekeeping policy is enforced.

The offices, conference room, lunchroom, stockroom, changeroom, and restrooms are situated on the east side of the building, while the instrument shop and maintenance shop are located on the west side of the building.

The three major areas of concern for asbestos exposure are (1) the asbestos storage room, (2) the debagger area, and (3) the area extending from the drawing vat to the drying oven.

The area extending from the drawing vat to the drying oven presents a potential exposure problem; however, daily washdowns are practiced and sampling indicates levels to be well below the allowable threshold limit value.

Job classifications in the actual work area are not very distinct. Some jobs are rotated on a semi-annual basis; however, most employees, regardless of classification will perform the same duties over a given period of time. This is due to a cross training program practiced in this block.

EXPERIMENTAL

Sampling Method

Personnel samples were collected from the operators breathing zone with a 37 mm diameter 0.8 micron pore size millipore filter mounted on an open fac filter holder and attached to the operators lapel. These cassettes were connected to monitoring pumps calibrated with a soap bubble meter. Area samples were collected utilizing the same equipment and method as the personnel samples.

Analytical

After obtaining the sample on the millipore filter, a four square grid section is cut from the exposed filter and placed atop a drop of clear mounting solution. The sample is centered on a microscope slide, covered with a cover slip, and allowed approximately fifteen minutes to clear up before the fiber counting may begin. (The mounting solution is prepared by placing 3 ml each of diethyl oxalate and dimethyl phthalate in a container with 0.6 g of ground up plain white millipore filter paper which dissolves into a clear solution in approximately three days.)

The samples are magnified 500 times with the Reichert Zetopan optical microscope and Nomarski Interference Contrast is used. All fibers over 5 microns in length with a 3 to 1 length to width ratio are counted as fibers (only one of the four squares is selected to count).

After the square grid is selected to be counted, twelve passes are required with the microscope to cover the entire square. All fibers greater than 5 microns in length are counted. To obtain the fibers/cc concentration (greater than 5 microns in length) the following calculation is used:

$$\text{Fibers/cc} = \frac{\text{fiber count } (> 5 \text{ microns in length}) \times \text{sizing factor (92)}}{\text{for filter}}$$

cc of air

(sampling time in minutes x flow rate of pump)

Standards are compared with other locations to confirm the integrity of the counting and analytical determination of fibers present.

RESULTS (See Attachment 1)

Cell Service

Monitoring results indicate all samples were below the present TLV of 2 fibers per cubic centimeter greater than five microns in length. These samples recorded a high of 0.79 fibers per cc. The average exposure level in the Cell Service area was 0.15 fibers per cubic centimeter.

Ramsay Scarlett - Storage Facility in Port Allen (See Attachment 2)

The five personnel samples at Ramsay Scarlett averaged 0.8 fibers per cubic centimeter with the highest exposure level recorded being 0.10 fibers per cubic centimeter. Nine stationary area samples averaged .02 fibers per cubic centimeter.

CONCLUSIONS

The monitoring results were satisfactory and well below the established threshold limit value of two fibers per cubic centimeter. However, due to the hazardous nature of asbestos, housekeeping and good safe operating procedures remain the most important considerations for a good abatement program. This must be a daily, job by job program to be successful and offer the greatest protection.

The Cell Service employees must be informed of this survey's results and the consequences of overexposure reviewed. (See Attachment 2.)

Attachment 1

CELL SERVICE RESULTS

<u>Sample Number</u>	<u>Date</u>	<u>Job Classification and Description</u>	<u>Sampling time (minutes)</u>	<u>Pump Flow Rate</u>	<u>Fibers/cc > 5μ in length</u>
56-79-05	2-14-79	Harold Hebert, O.S., worked the entire cathode area including the cathode wash area, the control board for the cathode drawing system and the remainder of the cathode drawing area. Monitored from 0730 to 1130.	240	1700	0.02
56-79-06	2-14-79	Ruffin Robillard, O.S., was monitored while he was operating the control board for the cathode drawing system from 0730 - 1130.	240	1700	0.04
56-79-07	1-14-79	Nolan Williams, laborer, monitored while hooking up cathodes in the cathode drawing area from 0730 to 1130.	240	1600	0.07
56-79-08	1-14-79	George Becnel, laborer, monitored while hooking up cathodes in the cathode drawing area from 0730 to 1130	240	1700	0.06
56-79-09	3-13-79	Leo Bowens, laborer, monitored while working on the anode line "dropping in cathodes" shaping and brushing copper from 0730 to 1130	240	1700	0.03

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Attachment 1 (Cont'd)

CELL SERVICE RESULTS

<u>Sample Number</u>	<u>Date</u>	<u>Job Classification and Description</u>	<u>Sampling time (minutes)</u>	<u>Pump Flow Rate</u>	<u>Fibers/cc > 5μ in length</u>
56-79-10	3-13-79	Thomas Snearl, laborer, monitored while working on the anode line "dropping in cathodes" shaping and brushing copper from 0730 to 1130	240	1700	0.08
56-79-11	7-9-79	Charles Bezet, monitored while working the control board in the cathode drawing system from 0915 to 1315.	240	1760	0.02
56-79-12	7-9-79	Nolan Williams, laborer, monitored while working in the cathode drawing area from 0915 to 1315.	240	1800	0.79
56-79-13	7-9-79	George Becnel, laborer, monitored while working in the cathode drawing area from 0915 to 1315.	240	1800	0.20

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Attachemnt 2

CELL SERVICE RESULTS

<u>Sample Nubmer</u>	<u>Date</u>	<u>Job Classification and Description</u>	<u>Sampling time (minutes)</u>	<u>Pump Flow Rate</u>	<u>Fibers/cc > 5_μ in length</u>
56-79-01RS	1-26-79	Stationary sampler located on top of 7M Asbestos pallet in Ramsay-Scarlett Warehouse from 0715 to 1415.	385	1800	.02
56-79-02RS	1-26-79	Stationary sampler located on top of 713 Blue Asbestos pallet in Ramsay Scarlett Warehouse from 0750 to 1415	385	1900	.01
56-79-03RS	1-26-79	Stationary sampler located on top of #2 Hooker Asbestos pallet in S.W. corner of Ramsay Scarlett Warehouse from 0750 to 1415	385	1800	.02
56-79-04RS	1-26-79	Stationary sampler located on top of No. 713 Blue Asbestos in middle of Asbestos storage area from 0750 to 1415.	385	1600	.02
56-79-05RS	1-26-79	Stationary sampler located on drum surrounded by pallets of Hooker #2 in S.E. corner of Ramsay Scarlett Warehouse from 0750 to 1415	385	1900	.02
56-79-14RS	4-6-79	Stationary Sample located in Ramsay Scarlett Warehouse on top of Asbestos pallet from 0800 to 1430.	390	1700	.01
56-79-15RS	4-6-79	Stationary sample located on Asbestos pallet in storage area of Ramsay Scarlett Warehouse from 0800 to 1430.	390	1400	.02

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Attachment 2 (Cont'd)

CELL SERVICE RESULTS

<u>Sample Number</u>	<u>Date</u>	<u>Job Classification and Description</u>	<u>Sampling Time (minutes)</u>	<u>Pump Flow Rate</u>	<u>Fibers/cc > 5_μ in length</u>
56-79-16RS	4-6-79	Stationary sampler located on Asbestos pallet in storage area of Ramsay Scarlett Warehouse from 0800 to 1430.	390	1600	.02
Ramsay Scarlett 1	1-16-79	Leroy Lockete, warehouseman unloading asbestos sacks from a tractor-trailer rig to be stored in the Ramsay Scarlett Warehouse. Some packs were thrown in the trailer in a haphazard manner and had to be restacked manually onto pallets before being moved into the warehouse. Job was monitored from 0808 to 1127.	199	1700	.10
Ramsay Scarlett 2	1-16-79	Johnny Hicks, warehouseman, working with Leroy Lockete to perform same duties described in above sample. Monitored from 0808 to 1127.	199	1700	.09
Ramsay Scarlett 3	1-16-79	Sam Charles, warehouseman, operating the tow motor to transport asbestos from the trailer to the warehouse storage area. Monitored from 0808 to 1127.	199	1700	.04
Ramsay Scarlett 4	1-16-79	Stationary sampler located 5 feet above floor on "I" beam near aisle next to asbestos storage area. Monitored from 0810 to 1129. Turned off pump and then turned back on at 1230 to 1352 for a total of 281 minutes.	281	1700	.01

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Attachment 2 (Cont'd)

CELL SERVICE RESULTS

<u>Sample Number</u>	<u>Date</u>	<u>Job Classification and Description</u>	<u>Sampling Time (minutes)</u>	<u>Pump Flow Rate</u>	<u>Fibers/cc > 5μ in length</u>
Ramsay Scarlett 5	1-16-79	Leroy Lockete, warehouseman, performing same duties as described in samples 1 & 2 above. Monitored from 1230 to 1352.	82	1700	.10
Ramsay Scarlett	1-16-79	Johnny Hicks, warehouseman, performing same duties as described in samples 1 & 2 above. Monitored from 1230 to 1352.	82	1700	.09

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EMPLOYEE EXPOSURE SUMMARY

FILLED IN BY J. S. Johnston

QUARTER 1st YEAR 79

PLANT Cell Service

BLOCK 5601 STRESS Asbestos

MINIMAL DETECTABLE
LIMIT AND UNIT 2 Fibers/cc 75m in length

		PERSONNEL						AREA				EXCURSION			
NO.	JOB CLASS	AREA/TASK	*PT. EQ.	TWA BASIS	NO. SAMPLES	AVG.	HIGH	SAMPLE DURATION	NO. SAMPLES	AVG.	HIGH	EXCUR. DURATION	NO. SAMPLES	AVG.	HIGH
01	OTT														
02	OT														
03	SOT														
04	OS	Cathode Drawing Area										240m.	2	0.03	0.04
05	SS														
06	EDO														
07	TAB														
08	TECH														
09	CLER.														
10	INSTR														
11	LABORER	Cathode + Anode										240m.	6	0.20	0.79
12	SUMMER														
13	CONT MAINT														
14	NON-OS SPEC.														
15	SECUR.														
16	MATL CONT														
17	LOADING	Ramsay Scamlett Warehouse										199m	3	0.07	0.10
18	LOADING (NO CLING)	Ramsay Scamlett Warehouse										82m	2	0.09	0.10
19	MGRS/NON-OP														
20	AREA SAMP (NO JC)	Ramsay Scamlett Warehouse										352	9	0.01	0.02

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* PROTECTIVE EQUIPMENT: (1) Mouthbit (2) Full Face (3) Half or Dust Face (4) Air Supply (5) Hearing Protection