PLAINTIFF'S EXHIBIT

MET-3

Kenneth Smith 4-26-76 depo.

Hugh Jackson

Confidential

February 3, 1949

V. Brown
J. F. Woodard

Industrial Hygiene - Survey of Men in Dusty Areas

I thought you should have a copy of the attached report which Dr. Smith at Asbestos prepared for Mr. Foster in connection with the studies being made to obtain additional data to justify some capital expenditures that are coming up in the very near future to improve the dust situation in and outside of the mills.

A. R. FISHER

Attachment

EXHIBIT 3

Continue w/ Layer 1433 Q&A

Still not tell the worker — followed Layer's advise

25/9

## INDUSTRIAL HYGIENE - SURVEY OF MEN IN DUSTY AREAS

The examination results and x-rays of 708 men working in the dust of the Mill and Bag Sorting and Cleaning Departments were surveyed. Included in the survey were the millwrights and electricians, the employees of the Quality Control and Fibre Development Department in addition to the regular Mill employees. All the employees in each department were surveyed regardless of age or lenght of service. The men were chosen because the dust concentration in their working areas is fairly constant and can be measured; also, there are the areas in which the efficiency of a ventilating or dust-control program could b estimated. The drillers and cobbers in the Mine being exposed to varying degrees of dust depending on the weather, were not included i this survey.

The purpose of the survey could be outlined as follows:

(a) To show whether or not the dust in these operations has affected the employees.

(b) To estimate the value of an efficient control program.

(c) To study the value of a firm policy on transfers of men to non-dusty jobs, in order to protect their health and prevent asbestosis claims.

(d) To inform the Company of the possible number of compensation claim cases which could be submitted in the future.

The following chart indicates the total number of 708 men divided into various age groups:

| Ages | Under 20 yrs. | 20-29 | 30-39 | 40-49 | 50-56 | 60- |
|---|---|---|---|---|---|---|
| Men | 14 | 305 | 209 | 129 | 40 | 11 |

This 514 or 72.6% of the men were in the 20-40 age group.

This chart shows the 708 men surveyed divided according to various periods of exposure to asbestos dust:

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 |
|---|---|---|---|---|---|---|---|---|---|
| Men | 297 | 162 | 101 | 52 | 61 | 21 | 6 | 5 | 1 |

It is interesting to note that 411 men or 58% of the total ha worked in the dust five or more years, the legal minimum period of time before an asbestosis claim will be accepted. Also, that 35 men or approximately 5% of the total have worked in the dust for a quarte of a century or more. Still more interesting is the fact that these 708 men represent 6371 years of exposure to asbestos dust!

Noted by AJL + HMJ
JPW 2/7

EXHIBIT 4

The x-ray films of the 708 men were reviewed and then grouped according to the following classifications:

Negative: Essentially normal and healthy lungs.

Hil +: This classification indicates a slight increase in the x-ray shadows at the roots of the lungs; all these films are considered normal.

P1: Very early signs of a non-specific fibrosis extending beyond the lung roots.

P2: Advanced fibrosis of a non-specific nature.

A1: Early Asbestosis.

As indicated, the increase in fibrosis could be caused by any number c respiratory infections or by foreign material in the air. For the purposes of the survey, the changes in x-rays from "Neg" through P1 to A1 should be considered as caused by asbestos dust.

| X-Ray Reading | Negative | Hil + | P1 | P2 | A1 |
|---|---|---|---|---|---|
| Men | 4 | 170 | 475 | 52 | 7 |

As would be expected, very few of the men exposed to dust had negative x-ray readings. A fair number (170) had "Hil +" readings but the majority (475 or 67%) fell into the "P1" group of early non-specific fibrosis. Then 52 films were read as "P2" or advanced non-specific fibrosis. For practical purposes, this latter group shou be considered as a "Pre-Asbestotic Group". Finally there were 7 films showing definite early asbestosis.

The above chart was then broken down to show the number of men with each x-ray classification grouped according to length of exposure to asbestos dust:

| Years of Exposure | Men With "Negative" X-Ray Readings | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45- |
| Men | 4 | - | - | - | - | - | - | - | - | - |

Thus all 4 men with negative x-ray had four years or less exposure to the dust.

Men With "Ill +" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 103 | 31 | 24 | 1 | 8 | 2 | 1 | - | - | |

Here we see that 170 men with apparently normal x-ray films have worked for varying periods up to 34 years in the dust. Although 80% of them have less than 10 years' exposure.

Men With "P1" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 187 | 120 | 70 | 39 | 36 | 14 | 4 | 3 | 1 | |

This chart shows that of 475 men 416 or 89% have had up to 20 years of dust exposure and still have no x-ray evidence of any specifi fibrosis.

Men With "P2" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 5 | 11 | 8 | 10 | 11 | 4 | 1 | 1 | 0 | |

The 52 cases in this group show advanced fibrosis in the x-ray but still of a non-specific nature. The majority of the cases (65%) h from 10-24 years of exposure.

Men With A1" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | - | - | - | - | 5 | 1 | - | 1 | - | |

Of the 708 men, 7 have x-ray evidence of early asbestosis. Al have had at least 20 years of exposure to the dust. It must be remembered that although these men have the x-ray evidence of asbestosis, they are working today and definately are not disabled from asbestosis They have not been told of this diagnosis for it is felt that as long as the man feels well, is happy at home and at work, and his physical condition remains good, nothing should be said. When he becomes disat and sick, then the diagnosis should be made and the claim submitted by the Company. The fibrosis of this disease is irreversible and permane so that eventually compensation will be paid to each of these men. A as long as the man is not disabled it is felt that he should not be te of his condition so that he can live and work in peace and the Company can benefit by his many years of experience. Should the man be told o his condition today there is a very definite possibility that he would become mentally and physically ill, simply through the knowledge that he has asbestosis.

The advisability of transferring these men is discussed later in this report.

When the five previous charts covering the x-ray readings are reviewed, it will be noted that as the years of exposure to dust increase, so do the changes in the x-ray films. This is simple evidence of a logical conclusion that asbestos dust causes fibrotic changes in the lungs which depend chiefly upon the length of exposure to the dust.

Two more charts are submitted for study:

Men With "P2" X-Ray Readings

| Age | Exposure 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 20 | | | | | | | | | | |
| 20-29 | 3 | 4 | | | | | | | | |
| 30-39 | 1 | 5 | 5 | 5 | 4 | | | | | |
| 40-49 | 1 | 2 | 3 | 4 | 4 | 3 | | | | |
| 50-59 | | | | 1 | 3 | 1 | 1 | | | |
| 60 + | | | | | | | | 1 | | 1 |
| | 5 | 11 | 8 | 10 | 11 | 4 | 1 | 1 | - | 1 |

Men With "A1" X-Ray Readings

| Age | Exposure 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 |
|---|---|---|---|---|---|---|---|---|---|---|
| Under 20 | | | | | | | | | | |
| 20-29 | | | | | | | | | | |
| 30-39 | | | | | 1 | | | | | |
| 40-49 | | | | | 2 | | | | | |
| 50-59 | | | | | 1 | 1 | | 1 | | |
| 60 + | | | | | 1 | | | | | |
| | - | - | - | - | 5 | 1 | - | 1 | - | - |

Considering the first chart of this group, 52 men are studied. All of these men should be considered as possible compensation claim cases. However, the two men in the age group of 60 + might not become claim cases because they have worked 35 years or more in the dust and have not developed asbestosis. Having five years or less to work before retirement, no transfer is recommended. If these men do not develop any secondary infection (influenza, pneumonia, etc.) they probably will not become claim cases.

The remaining 50 cases should be considered as pre-asbestosis cases and probable compensation claims. Transfers to non-dusty occupations will help most of these men, but will not prevent claims from being submitted should they develop any secondary pulmonary infections.

Considering the second chart of this group (A1 Readings) no transfer is recommended for the man of 60 + years of age, because the man's condition will not change in the few years that he has to work. Transfers will be considered for the others in an effort to postpone their eventual disability.

## CONCLUSIONS AND RECOMMENDATIONS

A survey of 708 men working in asbestos dust is presented. The x-rays of these men show that the increase in fibrosis of the lung is directly proportional to thelength of exposure to asbestos dust.

There are 7 cases of asbestosis and 52 cases in a "Pre-asbestosis group". These 59 cases are probable compensation claims Elimination of the dust in their working areas, or transferring them to non-dusty jobs will help the men, but will not prevent claims for compensation being submitted. Personal observation of several cases such as that of Mr. Napolean Desmarais, a Mill employee, forces me to believe that any secondary infections such as pneumonia, influenza, etc., are much more difficult to cure when superimposed on the fibrosis caused by asbestos dust. Thus should any of these 59 cases develop pneumonia, they might develop respiratory distress soon after being cured, and a compensation claim probably would be submitted.

The present procedure of theMedical Department is to recommend transfers of men on an individual basis, each case being studied separately. The routine transfer of men after a specified period of time in the dust is not recommended. If the x-ray picture suggest damage to the lungs, or there has been a lengthy exposure in a young man, transfer will be recommended before there is any possibility of a claim for compensation being submitted and accepted.

Adequate dust control is a prime necessity if asbestosis is to be prevented. As indicated earlier in this report, there are 475 men who have P1 x-ray readings, all of whom will show progressive fibrosis if allowed to continue working in dusty areas. As 89% of these men have had up to 20 years of exposure already, one can reasonably expect that most of them will show advanced fibrosis or even early asbestosis if their dust exposure is continued. As it is impossible to transfer this number of men, it is recommended that every effort should be made to reduce the dust in the working areas. Dust control must be emphasized.

In order to protect the health of the employees and prevent asbestosis claims, it is recommended that men be transferred from dusty areas when advised to do so by the Medical Department. This advice will be given before there is a possibility of a claim being accepted. Thus with early transfers and good dust control, asbestosis can be prevented.

PLAINTIFF'S EXHIBIT ML-8

Confidential

February 3, 1949

V. Brown
J. P. Woodard

Industrial Hygiene - Survey of Men in Dusty Areas

I thought you should have a copy of the attached report which Dr. Smith at Asbestos prepared for Mr. Foster in connection with the studies being made to obtain additional data to justify some capital expenditures that are coming up in the very near future to improve the dust situation in and outside of the mills.

A. R. FISHER

Attachment

EXHIBIT 3

25/9

## INDUSTRIAL HYGIENE - SURVEY OF MEN IN DUSTY AREAS

The examination results and x-rays of 708 men working in the dust of the Mill and Bag Sorting and Cleaning Departments were surveyed. Included in the survey were the millwrights and electricians, the employees of the Quality Control and Fibre Development Departments in addition to the regular Mill employees. All the employees in each department were surveyed regardless of age or lenght of service. These men were chosen because the dust concentration in their working areas is fairly constant and can be measured; also, there are the areas in which the efficiency of a ventilating or dust-control program could be estimated. The drillers and cobbers in the Mine being exposed to varying degrees of dust depending on the weather, were not included in this survey.

The purpose of the survey could be outlined as follows:

(a) To show whether or not the dust in these operations has affected the employees.

(b) To estimate the value of an efficient control program.

(c) To study the value of a firm policy on transfers of men to non-dusty jobs, in order to protect their health and prevent asbestosis claims.

(d) To inform the Company of the possible number of compensation claim cases which could be submitted in the future.

The following chart indicates the total number of 708 men divided into various age groups:

| Ages | Under 20 yrs. | 20-29 | 30-39 | 40-49 | 50-56 | 60- |
|---|---|---|---|---|---|---|
| Men | 14 | 305 | 209 | 129 | 40 | 11 |

This 514 or 72.6% of the men were in the 20-40 age group.

This chart shows the 708 men surveyed divided according to various periods of exposure to asbestos dust:

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 297 | 162 | 101 | 52 | 61 | 21 | 6 | 5 | 1 | |

It is interesting to note that 411 men or 58% of the total hav worked in the dust five or more years, the legal minimum period of time before an asbestosis claim will be accepted. Also, that 35 men or approximately 5% of the total have worked in the dust for a quarter of a century or more. Still more interesting is the fact that these 708 men represent 6371 years of exposure to asbestos dust!

Noted by AJL + HMJ
JPW 2/7

EXHIBIT 4

The x-ray films of the 708 men were reviewed and then grouped according to the following classifications:

Negative: Essentially normal and healthy lungs.

Hil +: This classification indicates a slight increase in the x-ray shadows at the roots of the lungs; all these films are considered normal.

P1: Very early signs of a non-specific fibrosis extending beyond the lung roots.

P2: Advanced fibrosis of a non-specific nature.

A1: Early Asbestosis.

As indicated, the increase in fibrosis could be caused by any number c respiratory infections or by foreign material in the air. For the purposes of the survey, the changes in x-rays from "Neg" through P1 to A1 should be considered as caused by asbestos dust.

| X-Ray Reading | Negative | Hil + | P1 | P2 | A1 |
|---|---|---|---|---|---|
| Men | 4 | 170 | 475 | 52 | 7 |

As would be expected, very few of the men exposed to dust had negative x-ray readings. A fair number (170) had "Hil +" readings but the majority (475 or 67%) fell into the "P1" group of early non-specific fibrosis. Then 52 films were read as "P2" or advanced non-specific fibrosis. For practical purposes, this latter group shou be considered as a "Pre-Asbestotic Group". Finally there were 7 films showing definite early asbestosis.

The above chart was then broken down to show the number of men with each x-ray classification grouped according to length of exposure to asbestos dust:

| Years of Exposure | Men With "Negative" X-Ray Readings | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45- |
| Men | 4 | - | - | - | - | - | - | - | - | - |

Thus all 4 men with negative x-ray had four years or less exposure to the dust.

Men With "Hil +" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 103 | 31 | 24 | 1 | 8 | 2 | 1 | - | - | |

Here we see that 170 men with apparently normal x-ray films have worked for varying periods up to 34 years in the dust. Although 80% of them have less than 10 years' exposure.

Men With "P1" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 187 | 120 | 70 | 39 | 36 | 14 | 4 | 3 | 1 | |

This chart shows that of 475 men 416 or 89% have had up to 20 years of dust exposure and still have no x-ray evidence of any specifi fibrosis.

Men With "P2" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | 5 | 11 | 8 | 10 | 11 | 4 | 1 | 1 | 0 | |

The 52 cases in this group show advanced fibrosis in the x-ray but still of a non-specific nature. The majority of the cases (65%) h from 10-24 years of exposure.

Men With A1" X-Ray Readings

| Years of Exposure | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| Men | - | - | - | - | 5 | 1 | - | 1 | - | |

Of the 708 men, 7 have x-ray evidence of early asbestosis. Al have had at least 20 years of exposure to the dust. It must be remembered that although these men have the x-ray evidence of asbestosis, they are working today and definately are not disabled from asbestosis They have not been told of this diagnosis for it is felt that as long as the man feels well, is happy at home and at work, and his physical condition remains good, nothing should be said. When he becomes disab and sick, then the diagnosis should be made and the claim submitted by the Company. The fibrosis of this disease is irreversible and permane so that eventually compensation will be paid to each of these men. Bu as long as the man is not disabled it is felt that he should not be to of his condition so that he can live and work in peace and the Company can benefit by his many years of experience. Should the man be told o his condition today there is a very definite possibility that he would become mentally and physically ill, simply through the knowledge that he has asbestosis.

The advisability of transferring these men is discussed later in this report.