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State Mining Engineer,
Mines Department,
PERTH

KALGOORLIE 2nd November, 1951.

Asbestos Hazard - Zittencoon Gorge

In reply to your letter 818/51.

It is of interest to know that the upper permissible limit of asbestos dust for a working atmosphere is 175 p.p.c.c.

It has been understood that the permissible limit of silica dust for a working atmosphere is 500 p.p.c.c. I imagine that this limit still holds.

An average of the samples taken both in the treatment plant and underground gives a dust count of 307 p.p.c.c. which is just over the permissible limit, if the particles are all silica. This high count may be accounted for by the fact that ventilating appliances were not being correctly used and that broken ore was not being watered.

My report states. "On examination of the dust samples, both from underground and the treatment plant, the amount of fibre visible is very small. Some samples appear to have no fibre present, and an estimate of the fibre present in the air would be very difficult to make." I paid particular attention to the samples examined in order to arrive at an estimate of the amount of fibre present, but came to the conclusion that the greater proportion of the particles were silica. However, Dr. Kessell states that many long fibres may have been excluded from the count because of their reluctance to enter a machine of the Watson Loniometer type. This may account for the absence of fibre in the samples, but it would be advisable to take a number of samples of the air, underground and in the plant, to determine the percentage of fibre present. It may be possible to make this sample by means of the sugar tube test or a tube packed with cotton wool. (The Government Analyst should be able to advise on this matter.)

Or possibly the Filter Paper sampler as used for Aluminium powder concentration, could be used for this purpose. A sample of the air could be drawn through the Sampler and the fibre and dust retained on the filter paper which could be submitted for analysis.

There is certainly little, if any, boring done in the fibrous material, but after the face has been fired and bogging and scraping operations are in progress much fibrous material could enter the ventilation system.

The enforcement of the use of plenty of water in the mine and the consequent need for a fibre-drying process in the treatment plant is an urgent necessity.

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