

KINGCOOLIE.

The Senior Inspector of Mines,
Mines Department,

15th September, 1950.

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The following results were obtained during our recent visit to Wittenoom. Each sample taken with the Hignett Impinger was over a 10 minute period. A check with the Konimeter was also made with each impinger sample, so that four Konimeter samples were taken at regular intervals throughout the impinger sample. i.e. One Konimeter sample was taken at the start, another at 3 1/3 mins, another at 6 2/3 mins, and the final one at the end, 10 minutes.

The recorded counts underground are as follows:

5 level 53⁸ E & S Stope.

Konimeter Samples	170, 500, 90, 1000	
Konimeter Average	850 p.p.c.c.	= 24,921,600 p.p. cub. ft.
Impinger Sample	300 p.p.c.c.	= 8,496,000 p.p. cub. ft.
Asbestos (10-40 microns) in Konimeter samples	1 p.p.c.c.	= 20,300 p.p. cub. ft.
Asbestos (10-40 microns) in impinger samples	2 p.p.c.c.	= 56,600 p.p. cub. ft.
Temperatures		74.5D 607.

The machineman was boring in a thro' air flow with velocity fluctuating from 0-40 ft/min.

4 level 42⁶ W & S Stope.

Konimeter Samples	210, 130, 110, 90	
Konimeter Average	360 p.p.c.c.	= 10,195,000 p.p. cub. ft.
Impinger Sample	540 p.p.c.c.	= 15,692,800 p.p. cub. ft.
Asbestos (10-40 microns) in Konimeter samples	0 p.p.c.c.	= 0 p.p.c.f.
Asbestos (10-40 microns) in impinger sample	3 p.p.c.c.	= 24,960 p.p. cub. ft.
Temperatures		78.5D 747

This sample was taken at the tailman's position whilst the scraper was operating in a thro' air flow with velocity fluctuating from 0-25 ft/min. The action of the scraper hoe appeared to induce air movement.

4 level 42⁰ S Stope.

Konimeter Samples	400, 500, 570, 440	
Konimeter Average	480 p.p.c.c.	= 24,072,000 p.p. cub. ft.
Impinger Sample	90 p.p.c.c.	= 2,546,800 p.p. cub. ft.
Asbestos (10-40 microns) in Konimeter samples	2 p.p.c.c.	= 56,600 p.p. cub. ft.
Asbestos (10-40 microns) in impinger samples	3 p.p.c.c.	= 24,960 p.p. cub. ft.
Temperatures		79D 76.5C.

The machineman was boring 50' from the ducting attached to a 12" E.V. installed at the manway. Air velocity 0 ft/min. The impinger result seems doubtful because this place was obviously dusty.

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4 level 42^S E Stops.

Konimeter Samples 470, 130, 60, 420
 Konimeter Average 540 p.p.c.c. = 15,692,800 p.p. cub. ft.
 Impinger Sample 150 p.p.c.c. = 5,125,900 p.p. cub. ft.
 Asbestos (10-40 microns) in Konimeter samples 1 p.p.c.c. = 28,300 p.p. cub. ft.
 Asbestos (10-40 microns) in Impinger sample 1 p.p.c.c. = 20,300 p.p. cub. ft.
 Temperature 76.5

This sample was taken after the above machineman had extended his ducting to the face. Whilst this sample was being taken, the machineman was drilling bit holes in the asbestos seam. Air velocity 100 ft/min. post face.

4 level 42^S Stops (Afternoon shift).

Konimeter Samples 1000+, 1000+, 1000+, 1000+
 Konimeter Average 1000+ p.p.c.c. = 728,320,000 p.p. cub. ft.
 Impinger Sample 1350 p.p.c.c. = 38,232,000 p.p. cub. ft.
 Asbestos (10-40 microns) in Konimeter samples - None visible.
 " Impinger

Temperature 81.5 77.5.

This sample was taken after the day shift firing. The time when the sample was taken would be approximately 4.30 p.m. Air velocity thro' stops 0 ft/min.

4 level 42^H Stops.

Konimeter Samples 800, 600, 350, 180
 Konimeter Average 560 p.p.c.c. = 27,187,200 p.p. cub. ft.
 Impinger Sample 320 p.p.c.c. = 9,062,000 p.p. cub. ft.
 Asbestos (10-40 microns) in Konimeter samples - None visible.
 " Impinger

Temperature 81.5 74.

This sample was taken at the tailman's position whilst the scraper was on rolling. Also nearby was a machineman boring. Air velocity thro' stops 0 ft/min.

4 level 42^H Stops (Afternoon shift).

Konimeter Samples 1000+, 1000+, 1000+, 1000+
 Konimeter Average 1000+ p.p.c.c. = 728,320,000 p.p. cub. ft.
 Impinger Sample 1100 p.p.c.c. = 31,152,000 p.p. cub. ft.
 Asbestos (10-40 microns) in Konimeter sample 0 p.p.c.c. = 0 p.p.c.c.
 " Impinger 2 p.p.c.c. = 56,600 p.p. cub. ft.

Temperature 81.5 74.5.

This sample was taken at exactly the same spot as the above sample. The time when the sample was taken would be approximately 4.20 p.m. Air velocity thro' stops 0 ft/min.

Main Adit East of No 2 Outcrop.

Konimeter Samples 80, 150, 20, 50
 Konimeter Average 150 p.p.c.c. = 4,248,000 p.p. cub. ft.
 Impinger Sample 170 p.p.c.c. = 3,671,600 p.p. cub. ft.
 Asbestos (10-40 microns) in Konimeter samples - None visible.
 " Impinger

Temperature 73.0 59.0

This sample is representative of the air entering the

3.

Main edit as fresh intake air from outside. Volume of air entering approximately 30,000 cfm.

Main Edit at the Conveyor Transfer Point.

Konimeter Samples 240, 90, 550, 230
 Konimeter Average 560 p.p.c.c. = 15,899,200 p.p. cub. ft.
 Impinger Sample 250 p.p.c.c. = 7,070,000 p.p. cub. ft.
 Asbestos (10-40 microns) 1 p.p.c.c. = 28,300 p.p. cub. ft.
 Asbestos (10-40 microns) in impinger sample 2 p.p.c.c. = 56,600 p.p. cub. ft.

Temperatures 77D 70C.

This sample is representative of the air after the intake from No 5 Cliff Opening has joined the downcast air in the main edit. Most of the dust would be created by the transferring of the ore from one conveyor onto another conveyor. Volume of air past here approximately 50,000 cfm.

Main Edit at No 5 Level Ross Chain Feeder.

Konimeter Samples 300, 220, 90, 10
 Konimeter Average 510 p.p.c.c. = 8,779,200 p.p. cub. ft.
 Impinger Sample 450 p.p.c.c. = 12,744,000 p.p. cub. ft.
 Asbestos (10-40 microns) in Konimeter sample 1 p.p.c.c. = 28,300 p.p. cub. ft.
 Asbestos (10-40 microns) in impinger sample 2 p.p.c.c. = 56,600 p.p. cub. ft.

Temperatures 79.5D 71.5C.

This sample is representative of the air which is exhausted from No 6 level and includes the dust created by the Ross Chain Feeder at No 5 level. This air then passes into the main airlock on No 5 level. Approximately 3,000 cfm passes this point.

Most of the above dust counts appear high. They were all taken under average conditions, therefore represent a true overall picture. All particles under 5 microns were counted as dust particles except obvious asbestos, but it is doubtful if this is correct because many of the particles counted appeared to be slightly lenticular. As it is impossible to say positively whether or not they are small asbestos particles, they must be treated as dust particles. Acid treating the sample would be the only sure method of eliminating unwanted material. According to the published figures silica particles less than 5 microns and asbestos particles 10-40 microns are the dangerous sizes. Therefore any asbestos particles I have counted as dust particles are in effect harmless, thereby giving an erroneous figure. As can be seen from the results the dust concentration in the main edit is fairly high. It times the dust from the mill also enters Nos 3 and 4 level intakes, but unfortunately no sample of this dusty air was possible, because whenever we were present at these points the wind was blowing from the wrong quarter, thereby taking the dust away from intakes.

The recorded counts in the mill are as follows:

Transfer Chute from Mine

Konimeter Average 330 p.p.c.c.
 Asbestos (10-40 microns) none visible.

Picking Station

Konimeter Average 400 p.p.c.c.
 Asbestos (10-40 microns) 1 p.p.c.c.

Symons Crusher

Konimeter Average 570 p.p.c.c.
 Asbestos (10-40 microns) 2 p.p.c.c.

Entrance to First Leg No 1 Subit Breaker.

Konimeter Samples 600, 230, 130, 170 (Cancel the 800)
 Konimeter Average 350 p.p.c.c. = 9,912,000 p.p. cub. ft.
 Impinger Sample 215 p.p.c.c. = 6,030,800 p.p. cub. ft.
 Asbestos (10-40 microns) in konimeter samples 1 p.p.c.c. = 22,300 p.p. cub. ft.
 Asbestos (10-40 microns) in impinger sample 3 p.p.c.c. = 56,600 p.p. cub. ft.

Control Portion in 111 (North) (Northward).

Konimeter Samples 260, 310, 190, 220
 Konimeter Average 490 p.p.c.c. = 13,621,900 p.p. cub. ft.
 Impinger Sample 315 p.p.c.c. = 3,920,800 p.p. cub. ft.
 Asbestos (10-40 microns) in konimeter samples 2 p.p.c.c. = 56,600 p.p. cub. ft.
 Asbestos (10-40 microns) in impinger sample 3 p.p.c.c. = 56,600 p.p. cub. ft.

South Bagging Station.

Konimeter Samples 190, 450, 210, 380
 Konimeter Average 620 p.p.c.c. = 17,275,200 p.p. cub. ft.
 Impinger Sample 810 p.p.c.c. = 22,939,200 p.p. cub. ft.
 Asbestos (10-40 microns) in konimeter sample 1 p.p.c.c. = 28,300 p.p. cub. ft.
 Asbestos (10-40 microns) in impinger sample 4 p.p.c.c. = 113,280 p.p. cub. ft.

Outside Mill Office on Lawn.

Konimeter Samples 100, 80, 150, 20
 Konimeter Average 180 p.p.c.c. = 5,097,500 p.p. cub. ft.
 Impinger Sample 250 p.p.c.c. = 7,080,000 p.p. cub. ft.
 Asbestos (10-40 microns) in konimeter samples 1 p.p.c.c. = 28,300 p.p. cub. ft.
 Asbestos (10-40 microns) in impinger sample 3 p.p.c.c. = 84,960 p.p. cub. ft.

From the foregoing figures it is easily seen that the konimeter and impinger do not compare very well. The konimeter samples being much higher than the impinger samples. The average of the konimeter samples being 621 p.p.c.c. whereas the average of the impinger samples is 491 p.p.c.c. However, the impinger collected much more asbestos (10-40 microns) than did the konimeter. The impinger averaged 24 p.p.c.c. whilst the konimeter averaged 1 p.p.c.c.

As this was my first experience on this type of work, the results obtained may be treated with suspicion if so desired, because on any job practice makes perfect. It appears however, that more work of this nature is desirable.

[Signature]
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