



pt. (handwritten)

WIMBORNE.

State Mining Engineer,
Mines Department,
PERTH.

20th July, 1962.

Ventilation Report - June, 1962.

Herewith, in triplicate, Inspector Simons report together with dust counts.

Other than the usual irregularities found, conditions were fairly good except at Australasian Blue Asbestos Ltd., and at Ravensthorpe Copper Mines.

The overall dust counts at Australasian Blue / asbestos are the worst I have seen. There is no doubt that in general conditions underground have improved, this being due to firm action taken by the Inspectors. We still have, however, the hazardous dust problem, and this problem will remain whilst present mining methods continue. I have written to the Manager of the Mine, requesting the abolition of 'under-hand' stoping; - a copy of my letter is attached.

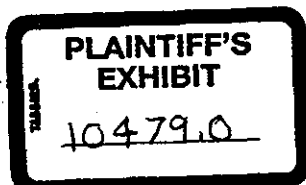
Dust is no doubt still being produced underground but the high counts found on the last inspection are not so high due to underground mining operations.

You will notice the following counts:-

19.6.62.	Day Shift	- Main Adit Bench,	650
19.6.62.	Aft. Shift	- Main Adit Bench	650
20.6.62.	" "	" " "	1000+
15.6.62.	" "	Transfer belt Main Adit	680
	" "	No. 6 Ross Chain feeder Main Adit	720
18.6.62.		No. 3 Ross Feeder Main Adit	850
		Transfer belt Main Adit	1000+
15.6.62.		7 level Transfer Grizzly	1000+

It will be realised that dust is entering the mine from the Mill via the Main Adit and that dust is also being produced from Ore transfer points in the Adit; this air continues through the underground workings.

I realise only too well that until such time when an effective dust collecting plant is installed in the Milling section we will have this trouble but the company has under expert guidance, constructed a new pilot plant for dust collection and is in the process of testing this plant. I feel therefore that I must be a little patient with the Milling Section.



There are however several points where dust is produced and where no effective control has been undertaken. I am instructing Inspectors to stop work at any of these points until the matter is remedied.

I am without doubt losing patience with this Company. All our Inspectors have gone out of their way to offer assistance to this mine and I am beginning to think that this has been taken as a sign of weakness. All kinds of promises have been made by the Management but very few fulfilled.

Inspector Ibbotson and myself both feel that we have reached the stage when we are afraid that our personal disgust could cloud reasonable unbiased interpretation.

I have already told the manager that if he does not fulfill his obligations, I personally will initiate prosecutions against him.

I must await results of the present dust collecting tests, but if they are not successful, or if they are successful and work not put in hand to immediately rectify all defects I will be both morally and duty bound to close the mine.

Ravensthorpe Copper Mines is another problem, but now that the Mine is to continue production, firm action will be taken to remedy defects.

SENIOR INSPECTOR OF MINES.

2.9.61
R. H. H. -

MEMORANDUM.

State Mining Engineer,
Mines Department,
PERTH.

14th July, 1961

Ventilation - Australis Blue asbestos Ltd.

Colonial Mine - Wittenoon.

Accompanied by Assistant Inspector Linton I carried out an inspection during both day & afternoon shifts of the mining & milling operations. A complete airflow survey was also carried out. The opportunity was taken to compare the Tyndalloscope, kindly loaned by Western Mining Corporation, with our Konimeter. As yet the results have not been collated, but once completed a separate report will be forwarded.

Background.

Visually, conditions throughout the mine generally have deteriorated considerably since my last visit. The rock dust counts are high, particularly during afternoon shift when smoke was also visible plus the obvious smell of fumes. As can be seen from the figures below, the average count for day shift is the highest ever.

The following figures show the average dust counts recorded over the past two years & illustrate the present conditions.

Day shift for June, 1960	250 p.p.c.c.
November "	180 p.p.c.c. (2 hour break)
" " " August 1961	420 p.p.c.c.
" " " March 1962	370 p.p.c.c.
" " " June 1962	490 p.p.c.c.
Afternoon November 1960	410 p.p.c.c. (2 hour break)
" " August 1961	620 p.p.c.c.
" " June 1962	590 p.p.c.c.

The underground employees & supervisors appear to have at last been educated in the correct use of the ventilating appliances, also the observance of the "Fire Regulation Act" generally.

The main edit, one again, is causing such trouble & regard to the dust hazard. Test counts taken at various times during our inspection resulted in an average count of 150 p.p.c.

The cause of this could be attributable to the negative airflow through the edit below No. 5 level. 10,000 cunins were found to be entering the main edit at the surface, but at had leaked into the lower main circuit on Nos. 1, 2 & 5 levels. The area between No. 3 & 5 levels was found to be 'dead'. A total of 6,000 cunins were leaking down through Nos. 5 & 6 levels service risers into the main edit & thence passing to No. 7 level under the influence of a 24" A.F. which exhausts this air along No. 7 level into the steep drift. Once the leakages are rectified it should be possible to draw the air through the edit from top to bottom, thus drawing in the air & any dust generated at various points in the drift.

...../2..

The stop drive program is now well in hand. In an effort to speed up this program most stop drives now being driven are 6' high x 5' wide instead of the old 4' or 2 1/2' wide and 3 1/2' high.

It is now possible to bore, fire, and go down 5' out per shift, which gives an advance of 11 feet per day as against the previous methods advance of approx. 4 feet per day.

Test pieces continue to be adequately ventilated with by an secondary air supply. Given another month or so more stop drive connections will have been effected thus giving the present marginal areas a much better cleansing of air. It can therefore, be readily seen that the ventilation officer has virtually an impossible task in counteracting the dusty mine atmosphere when the fresh air is polluted to such a degree.

An interesting point is in regard to the dust counts recorded at the aerator positions. These open tops should have good fresh air because it passes direct to them from the intake areas via the various levels. The average counts recorded were 430 & 610 p.p.c.c. for day and afternoon shifts respectively. It can therefore, be readily seen that the ventilation officer has virtually an impossible task in counteracting the dusty mine atmosphere when the fresh air is polluted to such a degree.

AIR REQUIREMENTS:

Two Richardson 60 A.F. class A axial flow fans continue to provide for the primary circuits. Their combined output is approx. 149,000 c.u.m. of this, however, only approx. 107,000 c.u.m. is fresh air, which gives an effective fresh-air throughput of approx. 71%.

UPPER MAIN CIRCUIT -

This main is serviced by the fan at No. 5 level of 548. It was found to be forcing some 17,000 c.u.m. into the workings. Of this, however, 3000 c.u.m. were leaking through the door positioned north of the surface rise air being recirculated. A volume of 54,000 c.u.m. is therefore being drawn into the mine via the surface rise at 548. The officials expect to speed up this fan in the near future so as to increase its output to approx. 85,000 c.u.m., which is still well below its capacity. Because of the increased pressure difference between the two seams, however, a greater short-circuit could eventuate unless the brattice leakage are overcome.

The 57,000 c.u.m. passing through the fan travel down No. 4 Adit and split at No. 6 level. 16,500 c.u.m. going south & 24,000 c.u.m. going north. The remaining 16,500 c.u.m. continues down No. 4 Adit to No. 7 level.

At present a door is sited in No. 3 Adit just west of No. 4 level, thus preventing the air of the lower levels passing to the upper levels. A new position between Nos. 5 & 6 levels in No. 3 Adit has been prepared for the door. It will be re-sited in the near future.

The volumes measured were as follows:

438	Cliff Opening	Exhaust	12,000 c.u.m.
128	"	"	12,000 c.u.m.
TOTAL			24,000 c.u.m.

No. 5 level Surface Rise intake 1,000 c.u.m.

The remaining 30,000 cunins (54,000 - 24,000) must therefore be leaking into the lower seam circuits through the poorly erected brattices between the two seams.

LOWER SEAM CIRCUIT:

The primary fan servicing this seam is situated at the cliff face in the upper seam at co-ords 490'. An effective brattice some 100' west of the fan prevents leakage of air from the upper seam into the fan direct. It was found to be exhausted some 92,500 cunins from the lower seam of which only 55,000 cunins were found to be entering through the intake area. The 30,000 cunins entering from the upper seam, so previously explained, would give an actual intake of 83,000 cunins to this circuit, of which, however, only approx. 64% is 'fresh air'.

The volumes measured were as follows:

Main / dit	Intake	11,000 cunins.
No. 1 Cliff Opening	"	1,300 "
No. 2 " "	"	5,000 "
No. 3 " "	"	16,200 "
No. 4 " "	"	1,000 "
	TOTAL	23,500

Surface Fan Exhaust 92,000 Cunins.

TEMPERATURE READING:

Conditions in the mill appear consistent with previous inspections. Particularly noticeable at night was the dust haze surrounding the mill & adjacent areas. This in turn is entering the mine atmosphere & no doubt contributes towards the high counts recorded, both underground & in the plant. Three separate dust counts taken at the mine bench recorded 1000+, & 650 p.p.c.c. during afternoon shift inspections & one taken after lunch during day shift gave a concentration of 650 p.p.c.c. Two inspections were done, one during day shift & the other during afternoon shift. The average counts being 695 & 770 p.p.c.c. respectively.

Average dust counts recorded are as follows:-

	Overhaul	Crushing Section	Mill section
June 1960	300 p.p.c.c.	280 p.p.c.c.	320 p.p.c.c.
September 1960	420 "	430 "	440 "
November 1960	460 "	440 "	420 "
August 1961	390 "	460 "	380 "
December 1961	510 "	435 "	600 "
March 1962	300 "	250 "	200 "
June 1962	730 "	700 "	720 "

The average dust count is the highest ever recorded. Conditions however did not appear any worse than previous inspection, except the one in March, 1962. This again emphasizes the fruitlessness of trying to judge conditions by visual observations only. The average dust count recorded in March was one of the lowest ever. The reason behind this was explained in detail in the March report.

Much effort & money is still being put into controlling the dust at its source. All systems fail, however, because the suction is not strong enough to draw all the dust & therefore incapable of drawing all the dust to the dust collection units. The units must therefore be cleaned frequently, especially when one considers the amount of dust being exhausted to atmosphere from them & until there are replaced by a more efficient arrangement little or no improvement in conditions can be expected.

At present experiments are being conducted with a pilot dust collection unit of the bag filter type. The bags or socks consist of a nylon fabric manufactured in Mexico. The amount of time we were able to spend at the experiments was very limited, but nevertheless we gained a fairly good idea of the unit's operation & design. Quite a number of dust samples were obtained by us, but owing to excessive dust being liberated during certain operations thus ducting up the slide, the first slide had to be discarded & a new sampling plan formulated. Five sets of samples were finally recorded at various intervals as shown below.

The unit was operating on a 2 hour cycle on the day of our samples. The cycle comprised a normal dust extraction for 2 hours 27 minutes, the remaining 5 minutes being used to collect everything from the unit. All operations are automatic & can be varied by altering the various settings.

Results reported are as follows:

5	minutes after collapse	670	h.p.c.c.
60	" " "	120	"
75	" " "	270	"
105	" " "	150	"
120	" " "	150	"
175	" " "	210	"

(i.e. 5 minutes before next collapse.)

Although the results do not appear impressive at first glance it represents a tremendous improvement over the present 'Rotolance' system. Also to be remembered is that the technicians conducting the tests are virtually exhausted, & until the tests are concluded & all data collected, the above results are of little use except they do give some idea of the unit's efficiency. All particles in the dust samples appeared to be less than 2 microns. The high number recorded 5 minutes after collapse could be ignored because in the actual full size unit the dust liberated during collapse will be passed through other bags collected before being discharged to atmosphere.

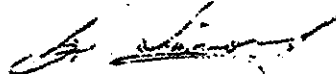
CONCLUSIONS:

Conditions throughout the mine from the dust angle would be at their worst, in fact the air is clean for any shift is the highest ever. When the amount of dust pouring into the mine with the fresh air is considered, one can see what a hopeless task the underground personnel have in controlling the hazard. One feels, however, that much more positive action could be taken in the mine toward reducing the dust hazard.

Some asbestos was seen in oil under
and much fibre was seen in the treatment of
particularly the mill section. The mill
bench also revealed fibre.

The experimental stoping block
still. After what appeared satisfactory progress
halted & pillars are now being cut. The basis of
this move is not known, but could be a start in
for the bulldozer trials.

Good co-operation still exists between us
personnel, but it is felt more positive action could
with the various projects & problems.


DISTRICT DIRECTOR (Ventilation.)

Transfer 4488 Main 4487			
4488	Main Chain feeder	79 - 77 1/2	650
4487		77 - 77	740
	Main 4487 Development	76 1/2 - 77	350
51 N	North Slope Drive	72 - 78	270
51 W	West Slope Drive	76 - 75	400
53 N	North Slope	77 - 70	150
5000	West Slope Drive	81 - 79	540
523	West Slope Drive	78 - 72	300
525	East Slope Drive	75 - 73	490
765	East Slope Drive	77 - 72	280
785	East Slope Drive	77 1/2 - 73	490
745	North East Slope	78 1/2 - 72	290
745	N.E. Slope	74 1/2 - 77	270
7 Level	Grizzly	81 - 77	140
745	S.E. Slope	79 - 77	810
7 Level	O.P. Pass Rice	80 1/2 - 78 1/2	1000+
745	East Slope Drive	81 - 78 1/2	690
2000	Experimental Slope	75 - 70	430
3 Level	Grizzly	78 - 64	1000+
22 N	N.W. Slope	78 - 71 1/2	180
Slope drive	exhaust airway between 2 & 3 levels		780
32 N	N.W. Slope	76 - 71	430
32 W	S.E. Slope	77 - 69 1/2	190
31 N	Transfer Position	77 - 65	50
22 S		76 - 62 1/2	180
52 S	N.W. Slope	76 1/2 - 72	310
32 S	West Slope	77 - 74 1/2	1000+
423	E.S. Slope	76 1/2 - 72	470
423	E.N. Slope	76 - 70 1/2	430
435	Mainway	74 - 63	280
	Skinner's Rice		550
	No 3 Pass Chain Feeder		1100+
42 N	Main 4487	79 - 75	300
42 N	S.W. Slope	75 - 73 1/2	390
41 N	N.E. Slope	75 - 72	1500+
41 N	West Slope	76 - 67	530
4800	Transfer Position	74 - 75	530
41 S	S.E. Slope	77 1/2 - 75	730
41 A	S.W. Slope	80 1/2 - 78	290
53 N	N.W. Slope	77 - 67	170
51 N	Transfer Position	76 - 69 1/2	250
51 S	West Slope Drive	74 - 65 1/2	200
52 S	West Slope Drive	77 - 70 1/2	310
52 S	East Slope Drive		

7 level	gully	80 - 78	1000
73 J	Scrofer Position	83 - 81	810
74 J	E. W. Slope	80' - 77'	720
74 J	N. E. Slope	79' - 76	240
75 J	E. S. Slope	78 - 75	420

Glennan Shift

2000	Experimental Slope	77 - 73	10000
2000	" "	77 - 69	130
32 N	East Slope	77 - 70'	15000
31 N	E. S. Slope	76 - 69	130
31 N	N. E. Slope	77' - 73	570
32 S	S. W. Slope	76 - 67	10000
32 S	West Slope	76' - 69'	570
42 S	South Slope	74' - 72	810
42 S	North Slope Drive	74' - 71'	840
41 J	Scrofer Position	74' - 71	910
41 S	N. W. Slope	74 - 72'	310
41 S	S. W. Slope	74' - 71'	150
41 S	Scrofer Position	77 - 67	520
4200	East Slope	74' - 72	1000
4100	Scrofer Position	74 - 65	510
41 N	E. S. Slope	74 - 71	720
41 N	South Slope	74 - 72'	140
43 N	North Slope	75' - 77	520
44 N	Scrofer Position	79 - 68	290

Long Shift

112 J	South Slope Drive	77 - 74	250
112 J	North Slope	75 - 63	40
111 J	Scrofer Position	73 - 61'	240
15 J	N. W. Slope	74 - 65	530
12 J	N. W. Slope	74 - 71'	510
1000	East Slope	74' - 72	520
6000	West Slope	75 - 72	720

61N	S + W Slope	50 - 73	550
61N	N + W Slope	77 1/2 - 78 1/2	650
61N	Scrapes Position	81 - 75 1/2	730
12N	Scrapes "	50 1/2 - 76	150
12N	N + W Slope	79 - 74	550
13N	N + W Slope	77 1/2 - 74 1/2	140
13N	S + W Slope	50 - 74 1/2	540
<u>Offshore Shift</u>			
12N	Scrapes Position	81 1/2 - 74	600
12N	S + E Slope	83 - 75 1/2	670
12N	N + E Slope	81 - 75	610
13N	North Slope Drive	50 - 76	400
61N	Scrapes Position	77 1/2 - 74 1/2	560
11N	North Slope	81 - 77	530
11N	SE Slope	50 - 75	510
600	Scrapes Position	77 1/2 - 71 1/2	440
600	SE Slope	75 - 75	510
600	SE Slope	81 - 75 1/2	710
62S	S + W Slope	76 1/2 - 75	750
12S	East Slope	79 - 74	410
611S	South Slope	74 1/2 - 64 1/2	140
611S	East Slope Drive	78 - 72	520
111S	N + W Slope	76 - 72 1/2	1100
15S	South West Slope	77 - 19	120
15S	Scrapes Position	77 - 76 1/2	1150
<u>Main Field Lunch</u>			
	7:45 P.M. 19/6/82		170
	8:10 P.M. 20/6/82		100 +
	1:30 P.M. 17/6/82		150

<u>Colonial Mill</u>	<u>Day Shift</u>	
Bagging Station		460
Wash Bench Area		510
Screens (East)		430
Control Switch Room		600
Screens (West)		590
Clean up under screens		1000 +
Entrance to Mill		340
3' Hydrants		1000 +
1 & 2 Screens Dry		230
4' Hydrants		190
Pickup on No 8 Conveyor		230
4' Hydrants		730
Row Clean feed No 2 Chute		100
No 2 Chute		1000
Picking Station		1000

Strong Easterly Breeze.