

FILE NAME: Colonial Sugar Refinery (CSR)

DATE: 1962 July 20

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DOCUMENT DESCRIPTION: Govt Inspection Results - Ventilation
Report - Australian Blue Asbestos Ltd has Worst Dust Counts
Inspector has Seen

223

pt. Haddock
State Mining Engineer,
Mines Department,
PERTH.

RECORDED.

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 Australian Blue Asbestos Ltd., and at Ravensthorpe Copper Mines.

The overall dust counts at Australian Blue /sbestos 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 too 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 M. Adit	720
18.6.62.		No. 3 Ross Feeder Main Adit	850
		Transfer belt Main Adit	1000+
19.6.62.		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.

PLAINTIFF'S
EXHIBIT

104790

PERGAD-Bygonne, N. J.

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.

Ravenshorpe 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.

*S.P.A.
Per Bell*

MEMORANDUM.

State Mining Engineer,

1.12 July, 1962.

Mines Department,

PERM.

Ventilation - Australian Blue asbestos Ltd.

Colonial Mine - Pittenong.

Accompanied by Assistant Inspector Loxton I carried on an inspection during both day & afternoon shifts of the mining & milling operations. A complete airflow survey was also carried on. 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.

Underground.

Vicually, conditions throughout the mine generally have deteriorated considerably since my last visit. The record dust counts are high, particularly during afternoon shift when smoke was also visible plus the odorous 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 trend of conditions.

Day Shift for June, 1960	230 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	110 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 Mines Regulation Act generally.

The main edit, one again, is causing much trouble in regard to the dust hazard. Dust counts taken at various times during our inspection resulted in an average count of 250 p.p.c.

The cause of this would be attributable to the negative airflow through the edit below No. 3 level. 10,000 cuins were found to be entering the main edit at the surface, but all had leaked into the lower seam circuit on Nos. 1, 2 & 3 levels. The area between Nos. 3 & 5 levels was found to be 'dead'. A total of 6,000 cuins 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 air. Once the leakages are rectified it should be possible to draw the air through the edit from top to bottom, thus drawing the dust away & dust generated at various points in the mine.

The stop drive program is not well 1. In an effort to speed up this program most stop drives being driven are 6' high x 5' wide instead of the old 1' of 24' wide and 3 1/2' high.

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

Test faces continue to be adequately ventilated either by secondary or primary. Given another month or so many more stop drive connections will have been effected thus giving the present marginal areas a much better clearing effect. Particularly noticeable should be the improved conditions during afternoon shift.

An interesting point is in regard to the dust counts recorded at the scraper positions. These operators 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. 72%.

UPPER MAIN CIRCUIT -

This soon is serviced by the fan at No. 6 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 and being recirculated. A volume of 54,000 c.u.m. is therefore being drawn into the mine via the surface rise at 548. Mine 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 leakages 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 as it will be re-sited in the near future.

The volumes measured were as follows:

435	Cliff Opening	Exhaust	12,000 c.u.m.
125	"	"	12,000 c.u.m.
TOTAL			24,000 c.u.m.

No. 5 level Surface Rise Intake 17,000 c.u.m.

The remaining 30,000 cfm (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 exhausting some 52,500 cfm from the lower seam of which only 55,000 cfm were found to be entering through the intake airway. The 30,000 cfm entering from the upper seam, as previously explained, would give an actual intake of 83,000 cfm to this circuit, of which, however, only approx. 64% is 'fresh air'.

The volumes measured were as follows:

Main / dit	Intake	
No. 1 Cliff Opening	"	11,000 cfm.
No. 2 " "	"	1,300 "
No. 3 " "	"	5,000 "
No. 4 " "	"	16,200 "
		1,000 "
	TOTAL	37,500

Surface Fan Exhaust 52,000 cfm.

TRIBUTARY PLANTS:

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:-

		<u>Overhaul</u>	<u>Crushing Section</u>	<u>Mill Section</u>
June 1960	300	p.p.c.c.	280	p.p.c.c.
September 1960	420	"	430	"
November 1960	460	"	440	"
August 1961	390	"	460	"
December 1961	510	"	455	"
March 1962	300	"	250	"
June 1962	730	"	700	"

The average dust count is the highest ever recorded. Conditions however did not appear as bad as previous inspections, except the one in March, 1962. This fact emphasizes the fruitlessness of trying to find 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 in to control the dust at its source. All systems fail, however, because the suction is not if not all dust is collected & therefore incapable of drawing all the dust to the dust collection units. The units must therefore be exhausted to atmosphere, especially when one considers the amount of dust being exhausted to atmosphere from them & until these 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 dusting 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 findings. The cycle comprised a normal dust extraction for 2 hours 27 minutes, the remaining 3 minutes being used to collect each bag and clean the unit. All operations are automatic & can be varied by altering the various settings.

Results recorded are as follows:

5	minutes after collapse	670 p.p.c.c.
60	" " "	120 "
75	" " "	270 "
105	" " "	170 "
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 'Rotocloner' system. Also to be remembered is that the technicians conducting the tests are virtually inexperienced, & 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 sample recorded 5 minutes after collapse could be ignored because if the actual full size unit the dust liberated during collapse will be passed through other bags collected before being discharged to atmosphere.

CONCLUSION:

Conditions throughout the mine from the dust cycle would be at their worst, in fact the air is as bad 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 combating the hazard. One feels, however, that much can be done & could be taken in the mine toward reducing the dust hazard.

Some asbestos was seen in all areas and much fibre was seen in the treatment area particularly the mill section. The borch also revealed fibre.

The experimental stoppage block still. After what appeared satisfactory, progress halted. The pillars are now being cut. The time for 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 Sells. Main Rd. 17.			79 - 77 1/2	150
42 N	South Slope Drive		77 - 77	740
46 N	West Slope Drive		76 1/2 - 77	350
Main Rd. Development			72 - 73	270
51 N	North Slope Drive		76 - 75	400
51 N	West Slope Drive		77 - 70	150
53 N	North Slope		81 - 79	520
5000	West Slope Drive		75 - 72	360
503	West Slope Drive		75 - 73	490
525	East Slope Drive		77 - 72	220
765	East Slope Drive		77 1/2 - 73	490
755	North East Slope		75 1/2 - 72	690
745	N. E. Slope		74 1/2 - 77	270
7 Level	Grassy		81 - 77	140
745	S. E. Slope		79 - 77	810
7 Level	Oro Pass Rise		80 1/2 - 78 1/2	1000+
75	East Slope Drive		81 - 78 1/2	690
2000	Experimental Slope		75 - 70	430
8 Level	Grassy		75 - 64	1000+
22 N	North Slope		75 - 71 1/2	150
Slope Drive exhaust answers between 2 & 3 levels				780
32 N	North Slope		76 - 72	430
32 N	S. E. Slope		77 - 69 1/2	190
31 N	Scrapers Position		77 - 65	50
32 S			76 - 62 1/2	180
32 S	N. W. Slope		76 1/2 - 72	310
32 S	West Slope		77 - 72 1/2	1000+
42 S	E. S. Slope		76 1/2 - 72	470
42 S	E. N. Slope		76 - 70 1/2	450
43 S	Manway		74 - 63	280
Manway Rise				550
No 3 Ross Chain Feeder				1000+
Field Transfer	Main Rd. 17		74 - 75	300
42 N	S. W. Slope		75 - 73 1/2	390
42 N	N. E. Slope		75 1/2 - 74	1500+
41 N	West Slope		75 - 72	530
4600	Scrapers Position		76 - 67	530
41 S	S. E. Slope		74 - 75	730
41 A	S. W. Slope		77 1/2 - 75	240
53 N	N. W. Slope		77 - 67	170
51 N	Scrapers 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	570

7 Level	Geology	80-78	1000
73 J	Scrap Position	83-81	810
74 J	E. S. Slope	80'-77'	720
74 J	N. E. Slope	79'-76'	740
75 J	E. S. Slope	78-75	720

Upstream Shift

2000	Experimental Slope	77-73	1000
2000	" "	77-69	150
32 W	East Slope	77-70'	1000
31 N	N. E. Slope	76-69	150
31 N	N. E. Slope	77'-73'	570
32 S	S. W. Slope	74-67	1000
32 S	West Slope	76'-69'	570
42 S	South Slope	74'-72'	510
42 S	South Slope Drive	74'-72'	840
41 J	Scrap Position	74'-72'	1000
41 S	N. W. Slope	74-72'	510
41 S	S. W. Slope	74'-72'	150
41 S	Scrap Position	77-67	520
4100	East Slope	74'-72'	1000
4100	Scrap Position	74-72	510
41 N	N. E. Slope	74-72	720
41 N	South Slope	74-72'	140
42 N	North Slope	75'-77'	570
42 N	Scrap Position	74-72	590

Long Shift

112 J	South Slope Drive	77-74	550
112 J	North Slope	75-63	40
111 J	Scrap Position	73-71'	540
15 J	N. W. Slope	74-65	550
12 J	N. W. Slope	74-72'	70
1000	East Slope	74'-72'	570
6000	West Slope	74-72	750

11N.	S. W. Slope	50 - 72	550
11N	N. W. Slope	71 $\frac{1}{2}$ - 73 $\frac{1}{2}$	650
11N	Scarp Position	81 - 75 $\frac{1}{2}$	750
12N	Scarp "	50 $\frac{1}{2}$ - 76	150
12N	S. W. Slope	79 - 74	550
12N	N. W. Slope	79 $\frac{1}{2}$ - 76 $\frac{1}{2}$	140
13N	S. W. Slope	50 - 71 $\frac{1}{2}$	540
<u>Efficiency Shift</u>			
12N	Scarp Position	50 $\frac{1}{2}$ - 74	600
12N	S. E. Slope	50 - 75 $\frac{1}{2}$	670
12N	N. E. Slope	51 - 75	610
13N	North Slope Curve	50 - 76	400
11N	Scarp Position	71 $\frac{1}{2}$ - 74 $\frac{1}{2}$	560
11N	North Slope	51 - 77	530
11N	S. E. Slope	50 - 75	560
1000	Scarp Position	79 $\frac{1}{2}$ - 11 $\frac{1}{2}$	140
600	N. E. Slope	75 - 75	510
1000	S. E. Slope	71 - 75 $\frac{1}{2}$	710
62A.	S. W. Slope	79 $\frac{1}{2}$ - 75	730
12A	East Slope	79 - 74	440
611A	South Slope	74 $\frac{1}{2}$ - 64 $\frac{1}{2}$	140
611A	West Slope Drive	70 - 72	520
111A	N. W. Slope	76 - 72 $\frac{1}{2}$	1100
15A	South West Slope	77 - 19	120
15A	Scarp Position	77 - 16 $\frac{1}{2}$	1150

Main Field Bench.	7:45 P.M. 10/6/12	170
"	5:10 P.M. 30/6/12	1100 +
"	1:30 P.M. 11/6/12	650

<u>Colonial Mill Day Shift</u>	
Bagging Station	460
Work Bench Area	510
Screens (East)	430
Control Switch Room	600
Screens (West)	540
Clean up under screens	1000 +
Entrance to Mill	340
3' Symons	1200 +
1 & 2 Screens Dry	250
4' Symons	140
Stripper on No 8 Conveyor	250
4' Symons	750
Row Clean for No 2 Addit	200
No 2 Addit	1000
Picking Station	1000

Strong Easterly Breeze.