APPENDIX I

SUPPLEMENTARY INFORMATION

OPERATIONS AT TALBOT ALLUVIALS No.2 SHAFT – DEVELOPMENT

Transcript of Conversation with Mr. Mervyn McPherson, Kerang, 23/2/92

Mr. McPherson is 74 years of age and had worked as a development miner in the northern shoot of the TA No.2 Shaft (Norbury's) from 1937 to 1940. He was contacted through is old friend Lindsay Garsed of Newstead and agreed to give information on the TA operations in which he had been engaged. His recollections were clear, and sharp responses were given without hesitation. There was general conversation and then questions and answers from a questionnaire prepared in advance.

Mr. McPherson worked on the northern of the two Norbury shoots, on the northern and western sides developing crosscuts and drives for later panelling-out by separate stoping crews. He worked with one mate, shovelling out the wash and setting timbering. They were assisted by one trammer who mucked into a 1/3 cu yard truck (9 cu ft, or a little under one half ton) and trammed it back to the raise, to be lowered to the haulage in the reef drive.

The management was English (Bewick Moreing, at the time well-known independent mining consultants acting for the companies who owned the properties). All staff were Australian. The men respected the manager, Mr. O'Brien, but lesser officials appeared not to have been quite so well-liked. McPherson was unable to enlarge on Mr. O'Brien's mining background.

Working conditions were very poor in development because a great deal of water was flowing out of the face being worked and the basement surface pugged to a depth of a foot or more. A fist could be plunged into the pug and the arm might go in up to the elbow, a sure cause of loss of gold.

He was working in a rich section of the shoot and his ends were still rich when the mine was closed down. The reason for closure was given as a 'screwed' Main Shaft where it passed through the wash section. The shaft timbering had rotated, which resulted in cages fouling the shaft walls. There was no means of rectifying it and any attempt at opening the linings to make adjustments would have resulted in immediate loss of the shaft. Some time before closure, haulage of men by cage (eight men normally travelled in a cage), was discontinued, so the miners had to travel 'on foot' up and down the shaft by ladder in the ladderway/services compartment.

There was never a 'second way out'. A shaft from surface was commenced at the northern shoot but never holed into the workings.

There was a suggestion that the English owners were not able or prepared to undertake necessary expenditure to make the best of what was a very good mining proposition.

The miners were very happy to work under arduous conditions because they were well-paid. They received additional payment in respect of 'wet working' and 'danger-money'. Labour turnover was low and men clamoured to work underground as those who took the risk could supplement earnings by theft of gold. There was mention of a minor staff member, a security officer, who built house on the proceeds of stolen gold, it then being suggested that he should stand aside to let someone else acquire a house!

McPherson was presented with six particles of gold arranged in order of size and set on a glass surface. He was asked to nominate the particle which best represented the size he remembered as being about average for the gold he saw in the course of his work. He selected the largest particle, which was about 1.5 mm in length but added that the average size of what he had observed at work was larger than that.

He was then shown a package of gold of various sizes from large and ragged to smaller size and asked if this could be sorted to give a representation of what he remembered. This was done. The sample was surprisingly coarse. (The gold used in these cases was from a shallow lead working at Dunolly, had 'thickness' and was not much worn, so it did not exactly duplicate the Norbury gold, which McPherson said was 'water-worn'.)

Questions and Answers

Q. 'The average size of gold was **bigger** than that No. 6?'
A. 'Oh yes, it was bigger than that.'

Q. 'Can you tell me what the maximum gold size was?'
A. 'It was more or less water-worn. We got bigger than that (indicating a ragged piece about 6 mm across and the largest piece in the sample presented). We got stuff like peas. You could pick it out, pick it off your shovel. Different shape to that. This is ragged. Our's was smooth and water-worn.'

Q. 'How much of it was flaky?'
A. 'Not that much of it. I think it wasn't flaky because of the soft reef (clay bottom). The flaky stuff was more or less lost.'

Q. 'Would that stuff we've selected be representative of what you got?'
A. Yes. With the exception of the large pieces like peas.'

Q. 'But **was** it as big as that?'
A. 'Yes, from what we saw. You might have got finer also if it had been washed in a dish. But this is only what you see in the face on the shovel as you pulled it up. You'd see it like wheat and peas around the back of the shovel.'

Q. 'How did you go about standing the sets?'
A. 'You dig at the top of the face and leave all your belly, you can hold that with 'he' and 'she' boards – faceboards. You had your mate driving home the headboards at the top and left the belly, otherwise the top and sides would fall in.' (Later on there was discussion of false sets to carry the headboards – in heavy ground sometimes more than one false set supporting the headboards as they were being driven.)

Q. 'Was there a specified distance at which samples were taken, and was it the one foot at the bottom of the wash as described in the 1936 'Chemical and Mining Engineering' publication reports?'
A. 'No. It depended on how the face advanced. Sometimes two false sets were used and you could take them out when she started to behave herself and settle down.'

Q. 'How many men worked in the No.2?'
A. 'I don't recall exactly. Your suggestion of 80 men in 1937 sounds about right.'

Q. 'In 1939, would there be 150 men all told with two-thirds working underground?'
A. 'Yes. I'd say so.'

Q. 'How were you paid?'
A. 'By the week. Contract would not work. One night I might not advance a foot – just working to hold it.' (That is, preventing the ground caving in.) 'The panelling men all worked on weekly pay too, for the same reason.'

Q. 'How did the stopers support the back as they worked in?'
A. 'They had timber sticks and headboards. Sometimes no headboard because by then the wash had dried out. It would stand when dried out. The real problem was fretting when the water was coming through during development. That was the hard work.'

Q. 'How about the levels?'
A. 'The rises should have been kept lower but then they would have reckoned that you were mining out too much of the bottom. I worked from a ten-foot rise where it should only have been say 8 feet. Then I wouldn't have been under level.'

Q. 'When you lost level, no sump pumps were used for ocal drainage?'
A. 'No. Too much water. A lot of the wash that spewed out of the face at you which didn't have any gold in it – you'd have been pumping that. Maintenance of the pumps would have been terrific.'

Q. 'How much dirt did a stope paneller dig and throw back in a shift?'
A. 'Depends on your ground, more or less. In panelling you'd get out a few trucks. You might get twenty trucks for the shift. That is, two men. It was good going once it dried out. Boulders were awkward and we left them to one side in the stope. They would have smashed up the gear at surface.'

Q. 'Was work done on one, two or three shifts per day?'
A. 'Three shifts. Eight to four, four to twelve and twelve to eight. You had to work shifts to hold your ground. The ground's on the move and needed men to prevent it getting away.'

Q. 'What was the usual thickness of wash mined?'
A. 'About 4.5 ft. It allowed for loss of space as weight came on the timbering. You could put in an eight foot set on the Friday and come back on the Monday and find it was only a 6 foot set – the sillpiece punched two feet into the basement pug.'

Q. 'Did you get to the stage where they (sill-timbers) got to the base of the pug and held?'
A. 'Well they more or less had to undercut and stand again. Once it drained out and quietened down it was OK. They had good drainage there – that's how they lost their levels, I think. They started off not allowing for when they got further in (i.e. too high a floor gradient).'

Q. 'In development, how was level controlled?'
A. 'That was done by the boss. Underground manager would tell the shiftboss what they had to do and he came along. He had an idea and you kept it going by the rate of water flow in the drain. You could tell by going back six sets and seeing how you were going by shining your carbide lamp. Not done by levelling instrument.'

Q. 'How far back did they throw in the panels? Twenty feet?'
A. 'Sixteen.'

Q. 'Back collapse in stopes?'
A. 'When it was dry it was firm but you had to watch it. When left it fretted away.'

Q. 'How much of the bottom was taken as a skim?'
A. 'They didn't take enough. They were too damned mean. A lot of gold was lost in that. They went over the top of it in a lot of places.

Q. 'In development, did you ever come across any quartz reefs?'
A. 'No. No.'

Q. 'Within the wash mined, was there any segregation into layers of sizes?'
A. 'All higgledy piggledy. You might get some big boulders today and be out of them tomorrow. Average size as big as your fist. It was rough. The fine stuff in between the bigger stuff spewed out at you with the pressure of water.'

Q. 'Were there any areas where there was a predominance of clay?'
A. 'No. No. The clayey stuff that went out on the waste dump was pug, that is, the reef.' (basement)

Q. 'How much of the stuff was cemented?'
A. 'There was some and there was gold in that but it was never crushed. No there wasn't that much. There was also 'mug's gold' (pyrite). There wasn't much of that either.'

Q. 'Did you come across timber or vegetable matter?'
A. 'No. No. It was all new ground. No, there was no hydrogen sulphide, or carbon dioxide. Ventilation was good – we had plenty of air. In fact, it was real cold when you were wet. You didn't stop for long! We had two oilers and flannel inside that to soak up sweat.'

Q. 'Reverting to the size of gold, of this list, which did you see?' (Presented a list of size graduations)
A. 'We never saw the flour gold and not much of the flaky gold. You'd have to wash it in a pan to see the small stuff.'

Q. 'Did you have any power tramming?'
A. 'No, there wasn't room. You could hardly do it by hand without chopping something out of the set legs! No slushers were used in panelling.'

Q. 'What was the dimension of the reef development?'
A. 'Sole pieces were six feet. (Misunderstanding here – MP referring to wash development.) 'Down below the rises (reef drive and crosscut), there they had the power, and battery locos. Trains of eight, ten or more trucks on a double track – hoisted and tipped into a bin at surface.'

Q. 'Were the sills of the sets set on bottom or into the bottom?'
A. 'They were set into the bottom as long as you got something solid. It might be a foot. The side boards of the lining kept the pug from being squeezed in - usually. Constant repairs. Oh God, yes!'

Q. 'Timbers all framed at surface?'
A. 'Yes. All ready to stand, machine cut. All green timber. Mountain ash, they used to call it but half of it was (expletive) stringy bark. Split like a match with much weight on 'em.'

Q. 'What do you reckon the gradient in the wash development was?'
A. 'As long as the water would run. That's all we worried about. Yes, it could be about 1:100.'

Q. 'Lighting and power?'
A. 'Down below they had electric lights (in the reef haulages). All we had was compressed air for the blowers and carbide lamps. Sometimes we only had candles, with a lid over the top. With a crook burner in a carbide lamp your nostrils got black, like soot.'

Q. 'Was most of the water removed by the tubes put up from the reef drives and crosscuts?'
A. 'No.'

Q. 'Any pneumatic spaders or picks in use?'
A. 'No. You didn't need any spader. It was loose enough in the wet ground. Yes. We were being assisted by water pressure?'

Q. 'I suppose the reef development was done using bar-mounted rockdrill?'
A. 'I think so but it was done before I got there. I got there about 1937 or 1938.'

Q. 'What were wages like?'
A. 'I was pretty well paid. All of us were happy to work there and sorry when it closed. Labour turnover was low. You get a good mate and stick with him. If the ground was coming at you you wouldn't want a rookie with you.'

Q. 'Security arrangements to prevent theft?'
A. 'They searched you on top but whether he did or whether he didn't ...' (Sentence not completed but infers that searching was selective).

Q. 'What about pumps at the shaft?'
A. 'There were three pumps, two going and one as standby. I wouldn't have a clue what they were.'

Q. 'What was the water like?'
A. 'It was fresh. Coming through all that wash it **would** be crystal clear and pure.'

Q. 'How many hoisting compartments in the No.2 Shaft?'
A. 'Two, and a service compartment/travelling–way. Each cage carried two trucks. 365 feet up the shaft to the brace.'

Q. 'Were you there when they put up the main raise through the reef?'
A. 'No. They had already done that. There had been a special gang for that work.'

Q. 'Were there safety bulkheads anywhere in the mine in case of water inrush?'
A. 'No. The trucks just came down in the shaft and took off. (straight into the reef drive) No, there were no doors to be shut off. No, there was no 'second way out'. No air shafts. A shaft had been sunk partway from surface but never holed into the workings – cost too much money!'

Q. 'Condition of the main shaft – it had a twist in it, didn't it?'
A. 'It must have happened fairly suddenly because if it developed (over time) you would have got a 'rough ride'. It was a screw – went like a propeller. Still able to hoist wash but men travelled by shaft ladders – until it got too bad and they closed it (the mine) down. We were told the closure was caused by lack of access through the shaft. They said, the shaft's screwed. It must have been rendered unsafe. It would have been a decision of the Mines Inspector. I didn't know him.'

Q. 'What were the handling arrangements for the hoisted trucks? They were trammed to the mill, were they?'
A. 'The wash was. If there was any mullock, that went straight out to the dump. Yes, the mill was further down. Most of the mullock came from the rising.'

Q. 'How did they empty the trucks and were they ever cleaned out?'
A. 'I don't know. We weren't allowed there (i.e. at the mill). The trucks were tipped at the brace and the wash went down into the chute, where it was drawn off for transport to the mill. The puddler was by the shaft.' (I remarked that now it has been removed I cannot recall exactly where it was.)

Q. 'Was all of the wash puddled?'
A. 'No, it went straight to the mill. If it was puggy and you had to take some of that reef (i.e. clayey rotted basement) that went through the puddler but the main production went straight to the mill.'

Q. 'Do you know how they treated the wash?'
A. 'No. We weren't allowed in there so I never saw it.'

Q. 'It looks to me that the treatment was different from that applied at the No.1 (Caralulup)?'
A. 'Well, it would be more advanced, wouldn't it? (I explained here the appearance of the Caralulup laminated fine ferruginous tailings.) If you see that fine stuff in the Norbury tailings, that's the fine stuff from the drift that's got away from the face. (Inference here is that there was fine drift above the coarse wash that was normally mined.) That would still have fine gold in it and it's got down on the pug and been removed as waste – and the gutters had to be cleaned out from time to time. It would have gone up as mullock but it would still be payable dirt. If a truck was derailed it was quickly cleaned up, roughly, to keep production going and the lost gold from the spillage was never recovered.'

Q. 'Was there any talk when you were there of doing development over on the side?' (i.e. western side of the lead channel which was not explored) 'Only half of the lead width was looked at and mined.'
A. 'There were rumours that they were going to put another shaft down, but amongst men you hear rumours everywhere. The shaft was screwed and that's it and the company's not going to put any more money into it.'

Q. 'There was no development outside the stoping?' (That is, development was not carried well ahead of extraction.)
A. 'Yes, that's so. That was still good gold (the last faces he worked) because I put another out and that was all in good gold. (Here he described a discussion of two shift bosses and some drilling to the west which Lindsay Garsed had done which tended to the opinion that another shaft should have been put down, with fair assurance of continuity of good gold.) We were told they wouldn't put any more money into it.' (I suggested that the War could have affected things and McPherson agreed this was so.)

Q. 'Do you happen to have any documents of those days or perhaps old company annual reports?'
A. 'No. We wouldn't have been allowed to look at them anyway. We were just the workers and weren't allowed in the office. As soon as you took your clothes off they were searched and you had to leave them there while you had a shower and then you rinsed them out and put them in the boiler house to dry.'

Q. 'Sounds all very autocratic!'
A. 'What do you mean by that? (Laughs) (I said, it's not like the Australia we know today) – 'No, God, no!'

Q. 'You enjoyed working there – obviously?'
A. 'Had to, and it was good money in those days. I was on good money. It gets into your blood, Dad, before me, before he took on the farm, was an old miner and I took on after him.

In further discussion concerning Mr. McPherson's subsequent mining activities on his own account in lead situations, he was unsuccessful through not having the funds to sustain the work. He worked at the Wattle Gully Mine, after the War, having enlisted in the Army in 1941 and serving in the Islands. There he had tropical ulcers which have troubled him ever since.

At one point the conversation reverted to pumped water, and the fact that 'it kept the Creek at Bong Bong going (presumably the Bet Bet Creek) and people pumped out and watered their gardens with it.' The comment was, 'it couldn't have been that bad.'

Q. 'Do you know if the shafts were filled in?'
A. 'I think they were going to fill them in for safety's sake. The depression at surface now is due to the filling going down in time and spreading out on the plats, which were quite big.'

Q. 'What did they do with all the gravel tailings removed from the dumps?'
A. 'They used it for road base and filling and put the surfacing over the top. Also for road deviations. They often put that rubbish in therefore temporary purposes.'

Q. 'Do you know if the slimes at Norbury's were ever retreated since they were deposited during mining in the 1930s?'
A. 'No.' (I asked if he thought it would have carried gold) 'That would be good. That would be under level – where we lost the level. When they undercut that, there wold be gold in that. That went out as slime. When they pulled out the pug, that went on the waste dump. They say there's a lot of loss in mining.'

At this point the discussion relating to Talbot Alluvials concluded.

The writer concluded that the information offered by Mr. McPherson was factual and not exaggerated in the detail given. Where questions were beyond his own knowledge he clearly stated this to be the case. Like so many genuine old miners, he had studied his craft and had good powers of observation and an excellent memory.

Examination of 'Average Size' gold sample nominated by Mr. McPherson

The sample selected was screened and fractions weighed and particles counted, with the following results.

Screen Aperture	Wht.gm	No. of Particles	Milligrams/Particle
+ 2.05 mm	0.52 (17%)	5 (2%)	104
+ 1.00 mm	1.65 (55%)	60 (22%)	27
+ 0.50 mm	0.74 (26%)	133 (48%)	5.6
+ 0.25 mm	0.10 (3%)	72 (26%)	1.4
- 0.25 mm	Tr	7 (2%)	N.A.
Totals	3.01	277	10.9 (mean)

Interpretation of the above results must take into account the subjective nature of the size selection made by Mr. McPherson after elapse of fifty years, though it is most likely that his recollection and selection would be close to his observation at the time at the development face. According to his recollection, he worked in the same part of the gold shoot so his observations might not have been duplicated elsewhere in the northern shoot or in the somewhat larger shoot worked to the south of No.2 Shaft.

The sample gold was fresh, hardly-worn Dunolly shallow lead material in relatively 'chunky' form, not water-worn deep lead gold. Therefore, deep lead particle weights at a nominated size would be only one half or one third of the indicated weights above.

Even adjusted downwards, the particle weights of Norbury's gold as observed in the mine are surprisingly high. Of course, the **average particle weight recovered in the mill** would have been significantly lower due to recovery of finer gold which was never detected under the conditions at the mining face.

The significance of this test is the fact that coarse gold was recovered at Norbury's No.2 Shaft. This working is 4.2 km north of the No.1 Shaft at Caralulup and over 7 km north of wash known to be auriferous on the boreline just north of Mount Mitchell. The presence of coarse gold at Norbury's suggests that recharge of gold via side feeders or auriferous reefs under basalt on the trend of the lead were a factor in enrichment.