File in Transfer Box No 1

ORIGINAL REPORTS on THE BLUE TIER TIN FIELD.

By

Mr. LUKE WILLIAMS

October - December, 1904.

INDEX TO MINES REPORTED ON.

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acres

Copy sent ... 21/10/04

Letter of Instructions

12th October

Luke Williams Esq.

Post Office, L a u n c e s t o n.

Dear Sir/

We beg to confirm our telegram of the 11th inst as follows-

"Proceed to Launceston Wait letter from us there mail"

We now wish to inform you that we desire you to ex[illegible] the copper properties on the Scamander, particularly the Proprietary, also the Full Moon near St Helens. [illegible] the above, we wish you to make a full investigati[illegible] Mines and Tin country situated in the distri[illegible] Tiers, with a view of ascertaining whether a [illegible] of properties could be secured and whether the mate[illegible] a payable grade to be worked in large quantities. We wish you to also forward a full report as to the results of your investigations and we should be glad to have an estimate of the time that you consider will be necessary to accomplish this.

With regard to the first visit to the Hercules and Mt Read district, we have to request that you will now send us full

statement of account so that this may be closed. As previously advised we want you to keep the Waratah visit quite separate regard these new investigations as a new enquiry. All of of course are to be treated as strictly confidential as ori arranged, and also the same methods are to be adopted in comm cating with us.

Yours truly,

P.S. The grade of Primrose ore which can be obtained abo per ton will suit our requirements and we shall be glad if yo will arrange for 50 tons of it to be shipped in accordance wi instructions which we previously conveyed to you by shippin direct to Sydney and dispatching to us without delay the sh. documents - You had better wire name of steamer.

We have no use for the 1000 bags of ore at the Copper Syndicate.

(Signed)

Knox and Schlapp

Copy sent Genl Mgr 25/10/04

20/10/04

Luke Williams, F.G.S. (London)

First Class Certificated Mining Manager; Tasmanian Government
First Class Certificated Mining Manager, The Chamber of Mines of Victoria, Melbourne, Australia.
Certified Assayer; Tasmanian Government, Laboratories.
Member of the American Institute of Mining Engineers.
Member of the North of England Institute of Mining & Mechanical Engineers
Member of the Australasian Institute of Mining Engineers.
Member of the Federated Institution of Mining Engineers, England.
"First class Certificated Mining Manager New Zealand Go

Launceston, Octr 1

Messrs Knox, Schlapp & Co.
163 William Street Melbourne.

Dear Sirs

Your wire of the 11th inst reached me Heazlewood, reading as follows :- "Proceed to Laun wait letter from us there Thursdays mail." I was able to complete my inspection of Tunnel Mine and others in the same ne so as to reach here yesterday.

Your letter of the 12th inst came to h last evening, the Steamer having been 3 p.m owing to a dense fog near the He morning, and letters were not deliv till near -ly 6. p.m. This morning I have been busy at the Offices getting permission to inspect the "Eastern Proprietary" Mine at the Scamander, and obtaining data about the Blue Tier Tin Mines from the Mines Offices, and have only time to reply briefly to catch todays outgoing Mail.

The Full Moon is a Tin Mine ~~near~~ on the Blue Tier

I have some very valuable papers at my home concerning the Blue Tier Tin Deposits which will be of great assistance to me in the examination of these Mines. I purpose going down by "Express" tonight and will obtain these & other papers, plans, Charts &c from the Mines at Hobart on Monday and proceed by Express Train on Tuesday morning to Conara and thence on to Scamander Copper Mines, afterwards to the Blue Tier Mines.

The time necessary to make a careful examination of the Scamander copper and silver mines, and Blue Tier Tin and prepare Reports will be approximately 6 to 8 weeks. The Blue Tier deposits are over a large area on the top and sides of [illegible] and there are several groups of Mines on which more or less work has been done at various times. It is a very important investigation and one which is worthy of going carefully into as there is an immense Tin bearing country there. You can rely on my doing the work as quickly as it can be done properly.

If however you wish only a preliminary and hurried inspection, I could do that first, and the more detailed one afterwards if you advise me.

I will send a/cs as requested as soon as I can get them out. I have telegraphed to the Premier Tasmania also Long Tunnel Mine & other Reports. about the 50 tons of ore and await his reply.

Yours Faithfully Lukie Williams

P.S. Every thing is strictly confidential. A telegram to Beaconsfield to arrive there up to 5 p.m. on Sunday next at St. Mary's Tas. up to noon on Tuesday next will catch me if required, after that please address to Post Office. Lottah. Tas.

E x t r a c t from Mr. Luke Williams' Letter of 21 Octr. 190[illegible]

To K.S & Co. Written from Moonah, Hobart.

Your code wire of the 17th inst reading "Await further instructions Thursday above address (Moonah) before pr[illegible] reached me on Monday evening. I did not get any letter from you by yesterday's mail but presume that it will reach me to-morrow by the mail leaving Melbourne Thursday.

E x t r a c t from Mr.Luke Williams'Letter of 24th Octr.1904

Moonah ,Hobart , Tas.

October 24th 1904.

Messrs Knox, Schlapp & Co.

Dear Sirs,-

Since writing you on the 21st inst. I have not received any letter or telegram from you giving me instructions as to the East Coast examinations.

I thought these may have come this morning by the Devonport route, so fearing that the letter may have gone to Lottah by mistake I cabled you this afternoon reading "With regard to other inspections, Waratah, sending report by to-day's mail. Am waiting here for instructions. Refer to your cable of the 17th, no letter to hand yet." I have got some very useful facts of the early workings of some of the Blue [illegible]s which will be useful to me when examining them, as [illegible] are now at work, viz. The Anchor and the Australian Tin Mine, and I am ready to go at any time you wish me to leave here.

.....

Copy sent to Gen. Mgr. 16/11/04

Luke Williams, F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
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MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.
"First-class Certificated Mining Manager New Zealand Government

Lottah. Tasmania. Nov 5th 1904

17/11/04

Messrs Knox Schlapp & Co
163 William Street. Melbourne.

Dear Sirs

Since writing you on the 29th inst, I have been over the Anchor, Crystal Hill, Liberator, Australian, Haley's Extended, McGough's, Full Moon, Beale, Lottah and other Tin Mines at the Blue Tier. This is undoubtedly an enormous belt of Tin bearing country stretching for over two miles in length, and varying in width from 1 to 16 chains as already proved. The depth ~~from~~ at the Anchor battery is fully 1500 feet below the Outcrops on the Tier.

The Anchor is generally regarded as the lowest grade body of Tin Stuff in the district, The general averages from the other Mines has been from a ½ to ¾ % which if large tonnages are obtainable, would be highly payable.

I shall now make a close investigation of the Mines and thoroughly sample them, Herewith enclosed please find valuable notes on the Anchor Mine, which please treat as Confidential.

Yours Faithfully
Luke Williams

P.S. You will note that the gross value of the Anchor stone is about 2/8 per ton, and not the profit as reported to you and mentioned in your letter of the 22nd Octr, I will [illegible] more fully with this in a later letter to you. L.W.

THE ARGUS,

JANUARY 24, 1905.

ECONOMICAL MINING.

ANCHOR TIN MINE.

(BY OUR MINING REPORTER.)

The tin-bearing formations in the Blue Tier Range, Tasmania, have been the subject of a good deal of controversy among the geologists of the state. The range rises to a height of nearly 3,000ft. above sea-level. Mr. W. H. Twelvetrees, Government geologist, points out that the granite of which the Tier is composed is the basement rock of the whole of the east coast of Tasmania. It is a [redacted] porphyritic granite, with large crystals of felspar. Difference of opinion begins, says Mr. Twelvetrees, when that portion of the granite which carries the tin ore is considered. Thureau and Montgomery hold that it is an intrusive dyke, traversing the granite; Professor Ulrich regarded it as a stockwork; and Mr. Twelvetrees, in his admirable monograph on the Blue Tier field, also takes the view that the formation is a mineralised zone of the granite mass.

Though there is such a great belt of tin-bearing country in the Blue Tier, to-day very little actual mining is being carried on. Indeed, the only company that is doing much more than making a pretence at solid work is the Anchor Tin Mine Limited, which holds 325 acres, situated on the slope of the range below the little hillside township of Lottah. The venture has for some time past been in the hands of an English company, and there has been nothing inspiriting about its career so far. The fact of the matter is that the formation is essentially a low grade, requiring engineering skill of a special order to handle. That skill was furnished by Mr. Lindesay C. Clark, and later on by Mr. James B. Lewis, formerly manager of the New Brothers' Home No. 1 mine, who succeeded Mr. Clark in the control of the property when that gentleman assumed charge of operations at the Briseis mine. The experience gained by Mr. Clark at the Mount Lyell mine in handling large quantities of material in the open-cut was invaluable to him when at the Anchor, for the mining work there is essentially of the same nature, though on a far smaller scale.

The ore is won by quarrying from the face of the hillside, and is then trucked to the battery to be crushed, and the tin concentrated. The size of the face, and the ease with which the ore can be broken, present ideal conditions for cheap working, and it was to secure efficiency in this direction that Mr. Clark reorganised the whole scope of operations at the mine. Mr. Lewis, the present manager, is also directing all his energies towards the same end. His objective is to handle a vastly-increased quantity of ore, so as to get the largest duty, commensurate with economy, out of the battery and concentrating plant. How improvement has been effected the following table will show:—

Year Ending.	Stamps Working.	Yield Tin Ore.	Stone Crushed.	Cost Per Ton.
		Tons.	Tons.	s. d.
June 30, 1899	46	131	38,179	3 10
June 30, 1900	38	152¾	40,838	5 5
June 30, 1901	33	140¾	38,190	5 11
May 13, 1902	43	146¼	41,530	5 2
June 30, 1903	76	258¼	108,529	3 5¼
June 30, 1904	91	243¼	136,655	2 10¼

When it is considered that the average value of the rock sent to the battery is roughly about 4lb. of tin oxide per ton, of a monetary value of about 3/ per ton, it will be seen that exceedingly close work has to be done to make both ends meet. The policy of the management of perfecting the means of transit from the face to the battery is the right one. It is essential that there shall be as little handling as possible, and that no time shall be lost in the discharge of the trucks. At the same time, owing to the fact that the mine has to pay for everything, it is not possible to make haste so quickly as seems desirable. The double handling of the ore, as carried on at present, will, therefore, very soon be avoided. It would be well if some of the Broken Hill methods of discharging the trucks could be adopted, for the way in which this work was done at the Anchor mine does not compare with Broken Hill despatch. At that field, as is the case at the Anchor mine, profits have to come from a narrow margin earned per ton, on a big output of ore, but the richness of the mines there in the early days enabled experiments to be conducted until the appliance required for any special work had been evolved. At the Anchor mine funds have never been plentiful, and every penny has to be carefully reckoned up. Therefore, it may be too much yet to look for the same perfection in mechanical appliances, and the same trained staffs of workmen, as are to be found at the Barrier.

The Anchor mine is worked in two benches, the lower being south-east, and about 80ft. below the other. The lower quarry is the main working, and it is intended to enlarge the face until it has a width of 8 chains. Operations at both benches are the same. The ore is broken down by blasting in the open cut, and is then trucked to the Gates crushers. Of late, the truck-roads have been altered so that they shall converge from either side of the face to the crusher-house. The crushers are being arranged in series with the object of having the rock broken to a smaller size, and at the same time enabling bigger stones to be dealt with. By this means it is expected that 20 per cent. more rock will be treated, and that through smaller-sized material being sent to the battery wear and tear will not be greater than hitherto. To ensure regularity in the supply of ore, a large bin, capable of holding about 2,000 tons of ore, has been built. To increase the output from under 140,000 to over 160,000 tons will be no mean feat, but Mr. Lewis has no doubt that the alterations he has planned will enable him to score such an achievement. It might be thought that by picking, a great deal of the worthless material sent to the battery might be excluded. But the fact that there is no way of tracing the tin, and that its occurrence is most irregular, necessitates everything broken being treated. From the crusher, the ore is conveyed by trucks to the battery. It is a point whether it would not be an improvement to have an automatic converger installed between the crushing plant and the batteries, though it is possible that the distance the ore has to be conveyed may tell against that appliance. The mill consists of two batteries of 50 heads each. The stamps are 800lb. weight, and are given a drop of 7½in., their average duty being 4¾ tons per head per day. The rock is crushed through a mesh of 100 holes to the square inch, and the pulverised material passes through classifiers to plunger jigs, of which there are about 20 in use, and then on to Frue vanners. The overflows from jigs are treated on buddles. Systematic sampling is done. In the first place, the face itself is sampled; then "grab" samples are taken from every truck of stuff sent from the Gates crusher to the battery; and next a check sample of the tailings is secured automatically by a device arranged by Mr. Clark when manager. The result of these samplings show that about 80 per cent. of the tin ore is saved, the loss being about 0.715lb. per ton.

The mine has a splendid water supply, which provides all motive power, and so enables the manager to put up what are probably records for cheapness of working costs. About 32 sluice heads are required to work the mine, and the average cost per ton of ore for motive power is only about a halfpenny. What an inestimable boon it would be to the Barrier if it could have the benefit of such a supply. The rearrangement of the works as carried out by Mr. Lewis has resulted in a steady reduction of working costs. Instead of the average being 2/8 per ton, as was the case last half-year, he has got it down to 2/1½ per ton. The figures are of such general interest to mining men that Mr. Lewis has kindly consented to their being published, as follows:—

	Per Ton.
Excavation, labour*	10¾d.
Explosives	1¾d.
Transport to battery*	1¼d.
Crushers, labour, &c.*	1¼d.
Battery wages, running (including tin dressing)*	5¼d.
Power	¼d.
Sluicing and stripping	¾d.
Sampling office, freight, &c.	3d.
Stores	1¼d.
Renewals	1¾d.
Total per ton	2/1½

*Including maintenance of plant.

The work being done at the Anchor mine is of great public interest. The Blue Tier is held to be the source of the tin ore found in the adjoining alluvial tin-bearing country. The denudation from it must have been immense in past geological epochs, but there still is left, as has been pointed out, a large belt of stanniferous-bearing granite to be developed and worked. Although patches of the formation are rich, still, as a whole, the mass is low grade. To win profits, then, mining must be on a large scale, and every working method and appliance that can contribute to economy and high extraction must be utilised. The Anchor company is the present day pioneer in these directions. The steady reduction in costs of late prove that the right class of skill has been enlisted. If further operations show that the venture can be carried to the dividend stage, then it is only reasonable to assume that the Blue Tier will be made to contribute on a much larger scale to the world's output of tin. It certainly has the priceless advantages of cheap motive power, a splendid climate, and easy working conditions.

Copy sent to Gen. Mgr. [illegible] 16

Cost of Mining, Crushing and Dressing 135860 tons of Tin Stone at the Anchor Tin Mine, Lottah, Tasmania, for the year ending 30th June 1904.

			Pence per ton
Quarrying (Mining) including Maintenance of plant			12.23
Stores and Renewals			0.31
Explosives			2.58
Trucking	Labor	1.86	15.12
	Stores and Renewals	0.16	
			2.02
Crushers	Gates and Blake, Labor	1.21	
	Stores and Renewals	0.41	
			1.62
Battery	Running	2.06	
	Dressing	2.00	
	Repairing	1.79	
	Stores and Renewals	2.45	
Power, Battery, Crushers &c			8.30
Sluicing, Clearing and developing			0.78
Office, including Telegrams and Postage			0.41
			0.44
Sampling		0.23	
Stores & Renewals		0.21	
Sundries		0.25	
			0.69
Blake Crusher Removing and Re-erecting			0.19
Freight			0.63
Fodder			0.36
Equals 2/6.56 per ton			30.56

Note. The Mine books closed with 135860 tons of Tin Stone treated for the year. Lucke Williams

Lottah. Novr 5th 1904

(1) Copy sent to Gen. Mgr.

Notes on The Anchor Tin Mine, Lottah, Tasmania

Year ending 30th June	Tons crushed	Tin Oxide obtained T. c. a. lbs	Cash Realised £. s. d.
1901	401 51	132 - 14 - 0 - 3	11355. 10. 7
1902	419 61	140 . 4 . 2 . 13	9548. 1. 8
1903	1078 82	249 . 10 . 2 . 18	19690. 14. 11
1904	1367 63	231 . 15 . 2 . 8	18043. 10. 8
	3267 57	754 . 4 . 3 . 14	£58,637. 17. 10

Average percentage of Tin Oxide obtained was 0.2[illegible]8 %
Average Assay of Tin Oxide gave 70 to 71% Metallic Tin.
Cash received during above years for each ton treated £3/7.068.
Tin Oxide obtained from each ton of Stone treated 5.170 lbs.

For the year ending 30th June 1904
The Ore sent to the Battery averaged 4.34 lbs of Tin oxide
The average Tin oxide won per ton of Stone 3.93 lbs " "
The average assay of Tailings per ton was 0.73 lbs " "
These results show an excess difference of 0.32 lbs . .
The average assay of the year's Tin oxide won was 71.82% Metallic
The Cash value per ton of Tin Stone treated for the year was £2-1-8.742
The total cost per ton to treat the Tin Stone was 2-6.56
The profit per ton of Stone treated for the year is in pence 1.314

There are 100 head of Stampers, original weight 1000 lbs now 800 lbs.
average number of Stampers working for the past year was 91.38
Average drops of Stampers per Minute 96.6
Length of drop Stampers have 7½ inches
Average tonnage crushed per Stamper per 24 hours 4.44
For fortnight ending 8th During October 1904 - 5863 tons of Stone were mined and crushed at a cost of £605.3.9 equal to 2/0.77 per ton.

(2) Copy sent to Com. Kyn

Notes on the Anchor Mine — Continued —

All the Machinery is driven by Pelton Water Wheels.
From the level of the Battery Ore Bins Benches have been opened at 30, 80, 60 and 40 feet high.
The 80 feet bench and the 60 feet bench are the Main ones and are now supplying most of the Stone required.
The lower (30 feet bench) is considered the best grade ore
The present face is 8 chains wide.
The Tin Stone is proved for 16 chns = 1056 f. wide.
There is from 40 to 50 feet of Overburden in parts of the faces, that is a very poor Tin bearing granite. —
This poor Tin bearing granite (Overburden) is all being broken and crushed with the other Stone.
No Stone of any description is being mined and dumped, everything broken goes through the battery.
The broken Stone weighs 113 lbs per Cubic foot.
Explosives cost in Launceston £2. 5. 0 per Case.
The Rainfall for 1903 at the Mine was 78.62 inches.
and for 12 months ending 30th June 1904 91.76 inches.
The Plant consists of 100 Stampers, 40 double plunger Jigs, 34 Frue Vanners and 6 Buddles. and Rock Breakers.
The Tin Stone seems practically unlimited and though previously worked at a loss the Mine is more than self supporting now.
A Rock Breaker to take 2'6" x 1'6" Rocks is now being erected at the Mine.
The Battery is 850 feet above Sea Level.

Lake Wellington
Lottah
Nov 5th
1904

E x t r a c t from Mr.LUKE WILLIAMS' letter of 10th Nov.1904
Addressed to Knox, Schlapp & Co., from Lottah, East Coast.

I have to acknowledge receipt of your letter of the 4th inst
.....
BLUE TIER. I will pay full attention to matters referred to in your letter..... I will write you again on Saturday re Blue Tier inspections.

Luke Williams, F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
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First class Certificated Mining Manager New Zealand Government.

Copy sent Director & Genl Mgr. 24/11/1904

Lottah, Tasmania.
Novr 12th 1904.

Messrs Knox Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

I wrote you on the 10th inst and now beg to enclose notes on my past weeks inspections of the Cambria, Liberator and Crystal Hill Mines on the Southern end of the Blue Tier Tin Field.

I have also given a good deal of attention to the old Lottah Tin Mine on the Eastern Slope of the Blue Tier and on which 3 Tunnels have been driven, The lowest Tunnel is 580 feet vertically below the old Full Moon Dyke outcrop, and has been driven on the course of the Lode 904 feet (so it is stated) towards the Moon Main Shaft, which is reported as having been sunk 120 feet deep and a drive put in 700 feet on the course of the Lode towards the Lottah, This deep tunnel is blocked at about 70 feet in from the entrance owing to the Collapse of an Air Shaft, to get past this block will require some timbering and wheeling away of the fallen dirt & rocks, I estimate the Cost of clearing the tunnel so that I can get into the Mine

and thoroughly examine it will be from £10 to £12 and would like your opinion on the matter before doing so, I might say that this is the deepest spot on the Blue Tier at which a Tin Lode has been seen, and there are some splendid tin stones lying at the heaps at the tunnel mouth, samples of which I will send ~~send~~ you next week with others from other mines. This property is held by T. G. Duff of Melbourne.

I have had two men cleaning out the middle tunnel at this mine. I expect them to complete the work tonight, the cost will be under £3.10.0. I will then be able to examine No 1 and 2 Lodes at a point 430 feet below the Full Moon mine and 150 feet above the lowest tunnel previously referred to as 580 feet below the Full Moon mine. I hope to report to you on this tunnel next week, The Lodes on the Lottah mine are the real tin Lodes from 1 to 4 feet wide of Quartz, carrying tin, and not in the form of dykes or large masses like the most of the Deposits on the Blue Tier.

Next week I hope to sample the Lottah, Liberator & Australian Tin Mines which will complete those on the South & East Slopes of the Tier. I will then camp on top of the Tier & do the Haley's Lease, Full Moon and other mines there.

I am going carefully into all details as to the extent & value of the ore also the Water Supply and power to be obtained at high levels. Herewith enclosed please find my Notes on the "Cambria" Liberator and Crystal Hill Tin Mines, samples will follow with others next week. Yours faithfully

Luke Williams

"Notes on the Cambria Tin Mine near Lottah. Tasmania.

The Cambria Tin Mng Co's workings (1700' A.S.L.) is situate a little over a mile S.W. of the Liberator Mine on the South Eastern Slope of Little Plain. The ground is held by the same people as the Anchor Mine. They gave £1000 Cash for it and put in 1½ miles of a Wooden tramway for the purpose of ~~bringing~~ taking the ore to the Liberator Battery, they having been advised that 40 tons of ore per day could be taken from the Mine to the Battery, but when at work only (6) six tons a day could be taken, or that was all that was taken.

100 tons of Stone was trammed to the Liberator battery and crushed, this was not crushed by itself but judging by the results from the battery it was estimated to have yielded ¾% of Tin ore.

There are a series of veins of Quartz carrying Tin, one lot runs N & S. the others E & W.

60 tons were crushed from the N & S. veins and 40 Tons from the E & W. Lode, as the largest one is called.

Two Tunnels were driven, One for 243 feet on the N. & S. Lode which varied from 3 inches to 4 feet, the largest solid vein I saw was one foot wide, the Lode underlies to the West 1 in 6.

A Tunnel was driven from a point 10 feet East of the approach to the N & S. Lode tunnel, for 53 feet in a N.E. direction, then 123° 6" Easterly and cut the East & West Lode, this was driven on for 71'. 6", but as the ends of these tunnels were only 45 feet below surface very little change was to be found in the ore.

I saw some splendid Tin crystals at the face of a shaft which had been sunk 40 feet deep on the East and West Lode, and on the Outcrops about 4 Chains East some fine (large) Tin Crystals were showing in the Lode, but in nearly every instance the Tin is only in joints and face veins.

This Mine is now advertised for Sale in conjunction with the Liberator Mine. it is a patchy Mine but may improve at a depth.

Luke Williams Lottah. Tas. Nov 12th 1904

Notes on the Crystal Hill Tin Mine near Lottah, Tasmania.

(A.S.L. means Above Sea Level)

This Company held 130 acres, South of the Australian Tin Mining Company's ground and between the Anchor and Liberator Co's properties.

These Sections have recently been forfeited, and the crushing and dressing plant was being removed when I saw it.

The plant consisted of a 10 head Stamper battery (1590' A.S.L.) 4 plunger jiggs and 4 frue Vanners, with Classifiers. All the Machinery was driven by Steam power.

So far as I can learn only about 200 tons of Stone was crushed for a yield of about one ton of Tin oxide.—

The battery was badly placed and only an intermittent supply of water was obtainable for dressing the ore.

The Cost of Engine drivers and Firewood was too great to work the mine at a profit, especially with 10 heads of Stampers.—

Tin Stone is proved running East & West through the Sections and appears to be the same run of Tin bearing rock as the Anchor and Liberator mines.

The width of Tin bearing rock has not been proved and as the bush is now very dense with young gums & wattle trees it cannot be easily determined.

I sampled the Tin Stone in (5) five Cuttings covering a length of about twenty (20) Chains, and a width of ten (10) Chains from North to South, but I do not think all the rock between these points ~~are~~ is Tin Stone.

Sample bags numbered 80, 82. 83. 84 & 85 are a fair average of the Stone from the five Cuttings or Trenches

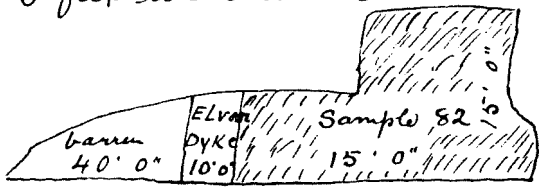
Notes on the Crystal Hill Tin Mine Lottah. Tasmania – Cont^{d} —

which I sampled on this Mine and which I shall now describe.

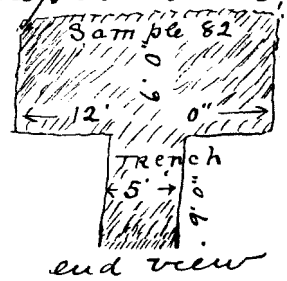
(1580 A.S.L.)

No 1 Trench (Elvan dyke.) is the most Easterly workings and is from $\frac{1}{2}$ to $\frac{3}{4}$ of a mile West of the Anchor mine workings A trench 60 feet long from 4 to 5 feet wide and from 0 to 9 feet deep has been brought in under an old surface cutting which was 12 feet wide and 6 feet deep, the face is now 15 ft deep. The first 40 feet of this trench was barren granite, then an Elvan dyke was cut and driven through 10 feet wide, this dyke runs East & West and stands nearly vertical.

After passing through this Elvan dyke, Tin stone was met immediately against its North wall, and continues for the full length of the Cutting 15 feet further North, making the total length of the Cutting 65 feet. Sample bag (82) is from this cutting 15 feet long, 15 feet deep in the end, 12 feet wide on top and 5 feet wide in the bottom thus



side view



end view

(1650 A.S.L.)

No 2 Eastern Workings. (Apatite trench) is about 5 chains West of the Elvan trench, and a little North of it. a Trench has been cut 12 feet long, 6 feet deep and 5 feet wide in a red felspar and Apatite, the latter being plentiful and is generally associated with the introduction of Tin into fissures.

I saw some splendid tin Specimens lying on the surface which ~~which~~ from their color and character I feel certain came from this trench, but as the bottom of the trench was on an ironstained floor of softer material, I do not place much value on the work

Notes on The Crystal Hill Tin Mine. Lottah. Tasmania, Continued —

already done here as the trench is evidently only in a crust of overlying rock. Sample bag No (83) is from here. I do not think the Tin Contents of (83) will prove Satisfactory from what I could see of the bulk of the Stuff, but I took it to make a check Sample against one taken by Mr Twelvetrees and which I will refer to later on in these Notes.

Gaunt's Shaft face No 3 workings (1640 A.S.L.) A small prospecting Shaft was sunk about 18 feet deep at this spot on fully 1st No Tin Stone, ~~and~~ A tramway was laid from the battery (about 15 Chains away) and a cutting was made 20 feet long, 20 feet wide with an average depth of 5 feet at the Shaft. The best of the Tin Stone was taken to the battery and crushed. The Tin appears to be in floors and is very irregular in its occurrence, where the patches occur they are very good. The Tin Rock here is a very kindly and good crushing white and greenish Stone, locally termed, Tin Granite.

The extent of the Tin bearing granite has not been proved here, it is a very suitable place to put down a Diamond drill bore. It is situate about 3 chains East of the Camp & 2 chains South, and 5 chains S.W. of the Apatite Trench. — Sample bag No (84) came from here.

No 4 Workings (1770 A.S.L.) These workings are about 25 chains Westward from the Camp, and only 5 chains South of the Main road from Weldborough to Lottah. The Tin formation is a large one (the extent not yet proved) a Tailrace 3 Chains long has been brought up and the soft Tin bearing formation has been Sluiced away 27 feet long, 21 feet wide and 14 feet deep, Some holes have been sunk 7 feet below this Cutting in apparently the same formation but they are now full of water, the whole Mass here shows Tin freely and

Notes on the Crystal Hill Tin Mine. Lottah. Tasmania, Cont. —

I took great care to obtain a true sample of the formation. I cut a channel around it for 105 feet and obtained a portion of the whole of the walls and also the floor, Sample bag № (80) is from here, Mr Twelvetrees estimated this cutting at 3/4% Tin ore.

Western Cutting (1660 A.S.L.) This is a cutting on the western side of the Creek coming down near the battery, and is N.W. of the battery about 10 chains. Some floors of very good Tin Stone is showing. An irregular cutting averaging 20 feet by 20 feet and 5 feet deep has been made and the best Stone conveyed by a Tramway to the battery and crushed, but the work done and stone crushed gives no criterion of the value of the whole mass as the floor of the Cutting has been allowed to rise with the joints in the Rock.

Sample bag № (85) is from here and will give a very fair idea of the average value of this part of the Mine.

Samples 84 & 85 are representative of the Stuff which was crushed from the Crystal Hill Mine.

It is important that ~~that~~ these samples should be carefully tested for Tin, as they represent a general average of what this property has exposed near the surface, and as Mr Twelvetrees the Govt Geologist of Tasmania sampled these five places and got a return (by the Govt Analyst) of 0.6% Metallic Tin, or 0.856% Tin ore I should like each bag tested separately and then a general average struck to see how far it agrees with his tests.

Mr Twelvetrees reported thus... The formation as a whole will not "cut out in depth, and if the undertaking is wisely managed on "an adequate Scale, I anticipate a prosperous future for it. —

This formation is apparently the Southern end of the Blue Tier Tin belt. I believe it well worthy of further prospecting with ~~with~~ the Diamond drill.

Luke Williams
Lottah. Tasmania.
November 12th 1904

Notes on the Liberator Tin Mine, near Lottah. Tasmania.

The Liberator Mine is West and adjoining the Crystal Hill and South of the Australian Tin Mine. The Weldborough-Lottah Main Road runs through the property. £4000 Cash was paid for the Sections.—
The Lode or Dyke Outcrop forms the apex of a rounded off hill (1800' A.S.L.).

Three Open Cuts have been made into the Tin bearing outcrops. 30 feet deep and from which 10.284 tons of Stone was crushed which with the 100 tons from the Cambria Mine produced 45. 1. 0 T. C. Q. of Tin Oxide. equal to 9.718 lbs of Tin Oxide per ton.
The average Tin Assay was over 72% Metallic Tin.
Some of the parcels gave over 74% Metallic Tin.
The lowest Assay was over 68% Metallic, this lot came from the Western face and was caused by the iron (Magnetic) in the joints.
20 Cubic feet of ore was calculated to be one ton.
To allow for moisture, each truck measuring 23 cubic feet was (after weighing several trucks) called one ton and as the trucks were sent down an incline tram to the battery not more than 20 cubic feet could be put into them so the Manager told me. and I think that is correct.
Mining. Explosives. Supervision. Materials. Trucking. Crushing. Dressing and realising Charges varied from 5/2 down to 4/2 per ton of Stone treated.
The Battery and Dressing plant consisted of 20 heads of Stampers, each 800 lbs weight. No 2 Gates Crusher.—
8 double Plunger Jiggs. 9 Frue Vanners. and
2 Borlase Buddles.
Stampers ran 95 drops a Minute, 7 to 7½ inch drops, and crushed 450 tons of Stone per week when working full time.
The water supply was intermittent, sometimes only 4 heads working.

Notes on The Liberator Tin Mine, near Lottah. Tasmania-Cont'd

The Staff engaged at this mine when running full time was

	£.	s.	d
1 Man @ 7/- and boy @ 3/6 day shift- only attending Rock breaker =		10.	6
1 Man @ 8/4 and boy @ 4/- day shift- to run Battery & dressing plant		12.	4
1 extra boy day shift- only, cleaning Slimes, & general work		4.	0
1 Man, Blacksmith, Carpenter & general repairer day shift-		8.	4
1 Man @ 7/6 and boy @ 4/- to run battery &c afternoon shift		11.	6
1 Man @ 7/6 and boy @ 4/- to run battery &c Night-Shift-		11.	6
Daily Wages to run Battery & dressing Plant	£	2. 18.	2 6
Wages to run Battery &c per week. full time.	£	17. 9.	0
18 Miners, Spallers, Truckers &c to break Tin Stone and supply the Battery, average weekly wages		35. 0.	0
Wages only to run Mine, Battery &c weekly.	£	52. 9.	0

This will average at 450 tons crushed weekly

	s.	D.
at the rate of per ton	2.	3.9
Explosives, Stores and Renewals per ton		1.10.0
Total Cost per ton to Mine & treat- Tin stone (fuel water supply)	4.	2.0

Shift- Bosses Wages 8/- 9/- and 10/- per shift-.

Miner's Wages 7/- to 7/6 per shift-.

Boys Wages 3/6 to 4/- per shift-.

The dressing Machinery is 420 feet below the Self acting Tram which is abont 15 chains long.

I will measure the workings and sample the Tin Stone next week.

This Mine and Plant- is for Sale by Tender on Dece 1st 1904.

Luke Williams. Lottah. Tasmania.

Nov 12th 1904

Louis made for directory 29/x/04

Luke Williams. F.G.S. (London)

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Lottah. Tasmania.
Nov 19th 1904

Messrs Kruse Schlapp & Co
163 William Street Melbourne.

Dear Sirs

your telegram of the 17th inst- I duly rec'd. reading

Tonica —	your letter of the 10th
Rearque —	Please telegraph me at once
Applicants —	The approximate assay value:
of —	of
all —	all
Hostillar —	Metals
in —	in
Sprostorm —	Zinc ore
Tributor —	Tributor
Pygmiest —	Can supply

I replied next morning as per copy herewith enclosed and await your further instructions. I wrote fully on the 10th inst- to Mr Hodges asking him to supply me with 50 tons of his (Smelting grade) zinc ore but I have not yet had any reply, probably he is away again. I am afraid

that- he will be difficult- to deal with unless I can have some definite offer to make him, and probably then I would need to meet- him to do business. As he is handling a good deal of money at- present- he will be rather independent— as he is putting out- more ore than the Hercules mine just- now. but- of course that- won't- stand long, as his tunnel is only shallow.

I daresay the Tasmanian Copper Co's Mine could be bought complete for £3000 or £4000 Cash.

The Long Tunnel Co° at Waratah. have decided to put- in Wooden Rails on their Tramway to test- the Mine, they have cut- the Lode in the bottom again, 3 feet- wide 18 inches of it- good firsts. I advised them where to drive for it-.

Herewith enclosed please find Sketch & extra Notes on the Liberator Tin Mine. Notes on the Australian Tin Mine. The Lottah Tin Mine. and Wooley's Tin Mine.

List of Samples I am sending you today and Copy of Cable I sent- you on the 18th inst-.

I have now completed my examination of the Southern & ~~Eastern~~ Eastern Slopes of the Tier and will examine those Mines on the Top and on the Northern and Western Slopes.

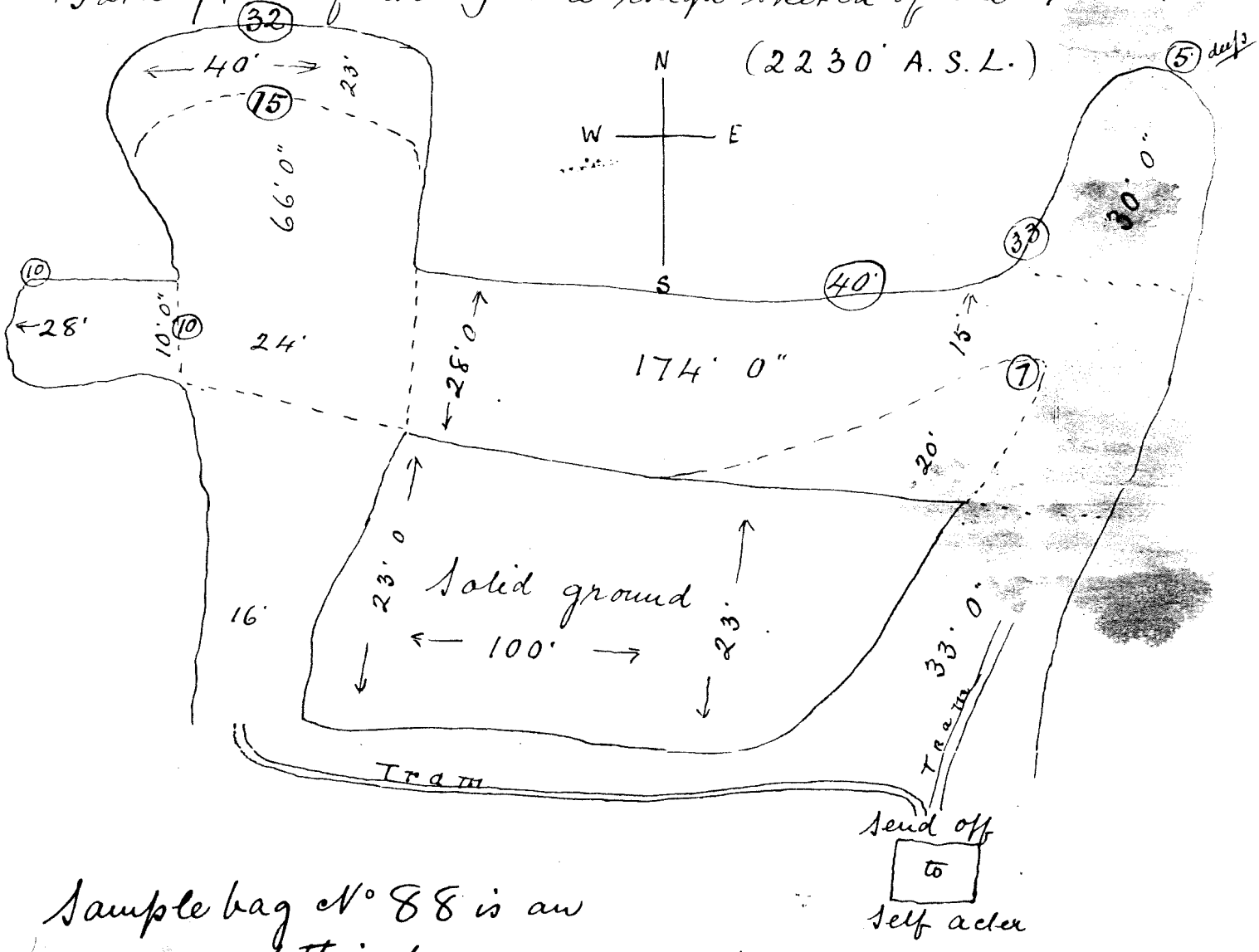
Yours Faithfully
Lukie Williams

P.S. The Steamer will not- leave St- Helens (George's Bay) until about- next- Wednesday with the box of Samples.

L. W.

Notes on The Australian Tin Mine. Lottah. Tasmania

This Co holds all the Southern Slopes of the Blue Tier from the Crystal Creek up to the Summit of the Lode outcrop, which gives a vertical height of over 1000 feet.
Two faces have been worked, the upper face known as the "Puzzle" face, is about 600 feet above the Battery, with which it was once connected by an aerial Tram 2732 feet long and a short self acting ground Tram 340 feet long making a total length of 2472 feet from the face to the Battery. The following is a rough Sketch of the Face.



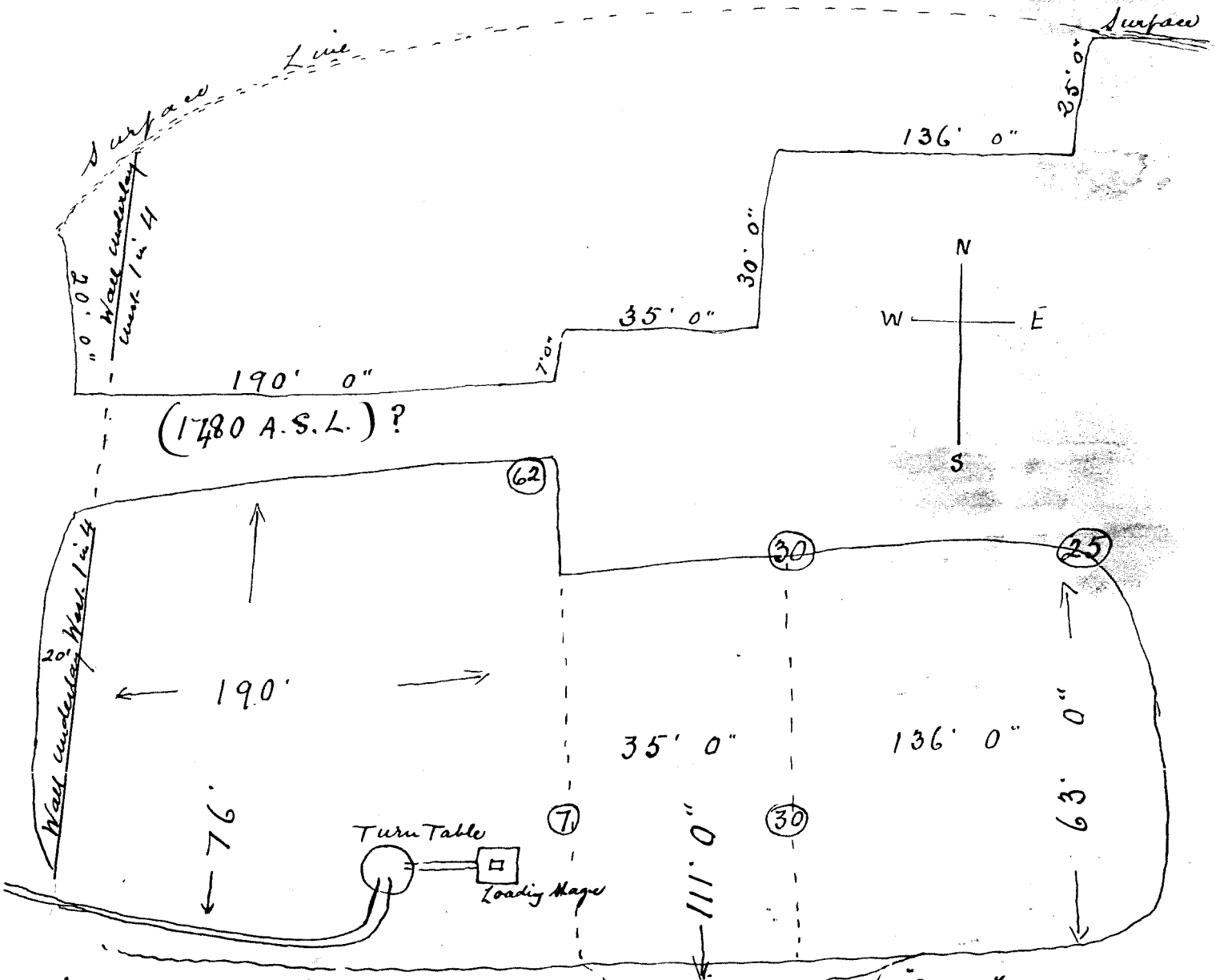
Sample bag No 88 is an average of this face.

Top Face Australian Tin Mine.

The deepest part of the Puzzle face is 47 feet, and width 226 feet. The total tonnage treated is not obtainable here, but crushings are reported to have averaged $\frac{2}{3}^{rds}$ per cent of Tin ore, equal to 14·93 lbs of Tin oxide per ton of stone treated.

Owing to the unsatisfactory manner in which the Aerial Tramway worked (in 1899) this face was abandoned for the Dow face which was purchased by the Co.

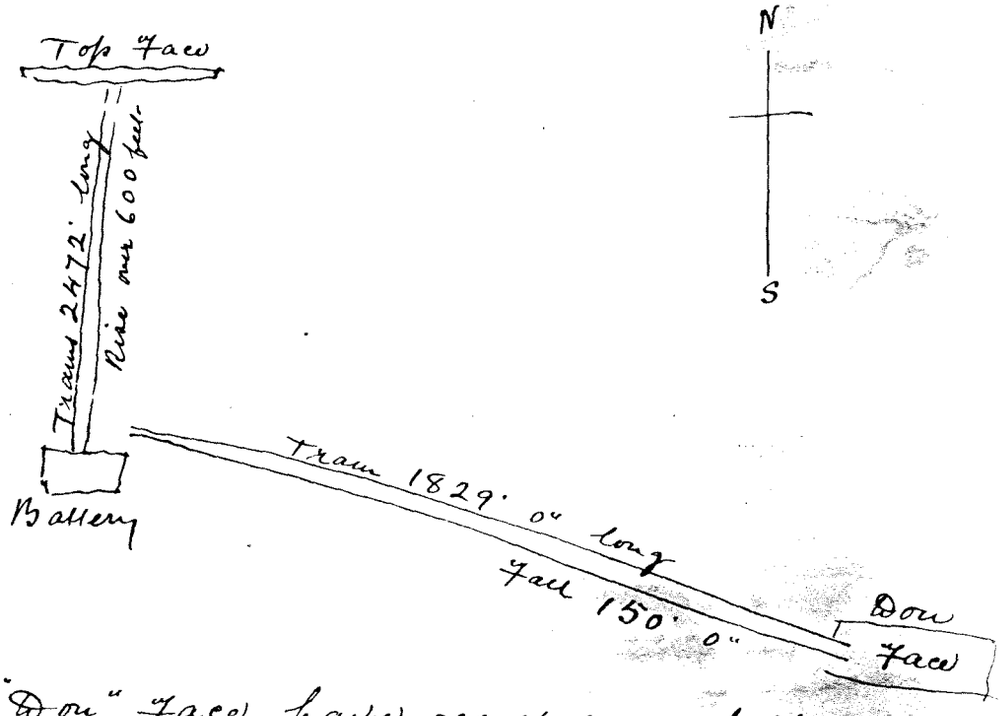
"Sketch of the Dow face"



Sample Bag No 89 is an average of this "Dow" face.

As will be seen from the Sketch on the previous page, the ore body is exclusive on the Don face also, it having been proved for a length of 361 feet, and a width of 111 feet, and no limits of its extent has been found, beyond the fact that the Wall on the Western side of the Cutting has not so good Tin immediately on its Western side as it has on its Eastern side.

The Don face is 1829 feet away from the Battery and 150 feet below it, and is thus about 800 feet below the upper face thus.



Crushings from the "Don" face have resulted as follows

2206 tons of stone	0.9% tin oxide	Metallic Tin 73%
773 tons of stone	.75% " "	
1075 tons of stone	0.93% " "	

The Machinery consists of Stone breaker, 30 heads of 600 lbs stamps, classifiers, 4 double plunger jiggs, 2 treble deck revolving buddles with outer discharge. 1 centre discharge buddle, one centre head revolving buddle, and one dead buddle.
One 18" Cylinder Horizontal Steam Engine 2·6" stroke, and a 26'x 6' boiler. The plant being driven by Steam, except-

except in Winter time when some assistance is obtained from a Pelton Water-Wheel, but the supply is intermittent.
Mr McCrindle of Melbourne is the Legal Manager.
The Mine is at present idle but will probably start work again soon after Xmas.
Locally the Australian Tin Mine (or the Puzzle as it is more frequently called) is looked upon as about the best Mine on the Tier, as drives could be put in on the course of the ore bodies giving 1000 feet of Backs, and the average values of the Tin Stone are equal if not superior to any of the others.
Hitherto the Co has been badly advised and with the present plant and system of working it will never pay expenses.
A separate engine is used to haul the dirt up to the Crushers from the Dan face (over 27 chains away) when it could easily be sent down from the tops face by gravitation.
No work has been done to prove if Tin Stone exists between the Dan Face and the tops face, but there is every likelihood that it does.
From the tops face to the Summit of the Tier on the line of "Lode" is 400 feet vertical height (by Aneroid) and the whole of this carries Tin Stone, which can be seen in trenches along the line.

After a careful investigation I think the Australian Tin Mine could be made a profitable investment if equipped with a suitable plant driven by Water power, which can be obtained by making Reservoirs on the tops and sides of the Tier.

Luke Williams
Lottah. Tasmania
November 19th 1904

List of Samples of Tin Stone sent from the Blue Tier Tin Mines. Tas. By Luke Williams To Messrs Knox Schlapfs & Co. Nov 19th 1904.

No 80 From Crystal Hill Tin Mine (No 4 workings) soft formation on ridge 27' x 21' x 14' deep. average of excavations.

No 82 average sample of Elvan Trench (No 1 Trench) Crystal Hill Mine for 15 feet deep. the upper 6 feet in depth is 12 feet wide, and the lower 9 feet in depth is 5 feet wide.—

No 83 average sample of Apatite Trench (No 2 trench) Crystal Hill Mine 12 feet long. 5 feet wide and 6 feet deep.

No 84 average sample from Open Cut at Gaunts Shaft (No 3 face) 20 feet long, 20 feet wide, and 5 feet deep. Crystal Hill Tin Mine.

No 85 average of Stone sent to Battery from the Western Trench 20 feet long, 20 feet wide, and 5 feet deep at the Crystal Hill Tin Mine.

No 86 Average of 3 Open Cuts at the Liberator Tin Mine, from which 10.264 tons of Stone was crushed.

List of Samples of Tin Stone - Continued - Nov 19th 1904

No 87 Average Sample of Wooley's Lode, 9 inches wide 529 feet long, and 230 feet deep as exposed on the face of the hill on the Southern Slope of the Tier, and situate East of the Australian Tin Mine.

No 88 Average Sample of the "Top Face" of the Australian Tin Mine, 226 feet wide and from 5" to 47 feet deep.

No 89 Average Sample of the "Dow" Face of the Australian Tin Mine, for a length of 361 feet, and a total height of 62 feet.

A. Samples wrapped in paper and marked A showing coarse Tin oxide Crystals were broken by Luke Williams from the "Lottah" middle Tunnel (2060 A.S.L.) at 225 feet in from the Tunnel entrance. Lode 18 inches wide.

B. Samples of Lode Tin Stone selected by Luke Williams from the ore lying on the tip at the lowest Tunnel of the "Lottah" Mine, this tunnel is reported to be 904 feet long, but is blocked at 70 feet in from the entrance.

Luke Williams
Lottah. Tas. Nov 19th 1904.

Notes on the Lottah Tin Mine. Lottah. Tasmania.

The Lottah Mine differs from most of the other Tin Mines on the Blue Tier, as its "Lodes" are from 3 inches up to 3 & 4 feet wide, carrying rich tin, judging from the Stones lying outside the two lower tunnels.

The Mine is on the Eastern fall of the Blue Tier at the head of the Ransom River, portions of the surface have been worked for alluvial Tin along the line of Lodes of which two have been proved by Tunnels. These Tunnels have both fallen in and I could only get in to the lower one 70 feet after clearing away the fall at the entrance, at this point an air shaft had collapsed and filled the tunnel and I did not think it worth the cost to clear it out at the present time as it may cost £10 or £12. Owing to the drive being closely timbered the lode cannot be seen overhead. "Mr Montgomery (Govt. Geologist) "reports it to be 904 feet in length, the Lodes (2) consist of "from one to four feet of tin bearing stuff, consisting of a "Main vein of quartz from 4 to 8 inches thick and several "parallel quartz veins from 1 to 2 inches thick separated from "the Main vein and from one another by bands of altered granite "of a dark gray color; both quartz and granite contain tinstone "Molybdenite &c and very good patches have been met with. "It would be hard to find finer specimens of Tin ore than "have been taken from this mine.

"Lying outside the mouth of No 2 adit there is a heaps of "about 40 tons of stone saved while putting in the drive.

"The Manager of the mine informed me that a Tributer had "kicked this heaps all over and obtained 12 tons of black tin "simply by bruising and washing the ore".

Notes on the Lottah Tin Mine – Continued. —

150 feet above the lower (No 3 Tunnel) is No 2 Tunnel (2060 A.S.L.), which I cleaned out and inspected for a length of 234 feet, at this point the Rise above the tunnel had fallen in and blocked the drive, at 225 feet in, I broke samples marked A in box sent you from Georges Bay by Steamer, the Lode here shows 18 inches wide against the Footwall [and looks well] The lode shows [strong and] well defined generally in this tunnel so far as I could see, and is from 3 inches up to 3 feet wide, Course 10° West of North, Underlay West 1 in 2½. The drive is reported to be about 500 feet long, two crosscuts have been put in to the Eastwards to cut No 2 Lode and about 60 feet driven on the course of No 2 Lode. about 40 tons of (good looking) Tin Stone is stacked at the mouth of this tunnel, (some of the stones show excellent Tin oxide)

The Samples marked B I selected from the lower Tunnel of the Lottah Mine (they are from the heaps outside the Tunnel) and as this heaps has been picked over for many years past by prospectors, Miners & visitors it is certain that the ore when first broken was high grade.)

At present I consider the chief value of the Lottah Mine is the fact that the lower tunnel would drain the Full Moon Mine to 600 feet deep, if the lower tunnel was driven underneath it, the distance being estimated at 2300 feet, and this would be on the course of the Lode. I cannot say anything further of the Lottah Lodes as the tunnels are both blocked now.

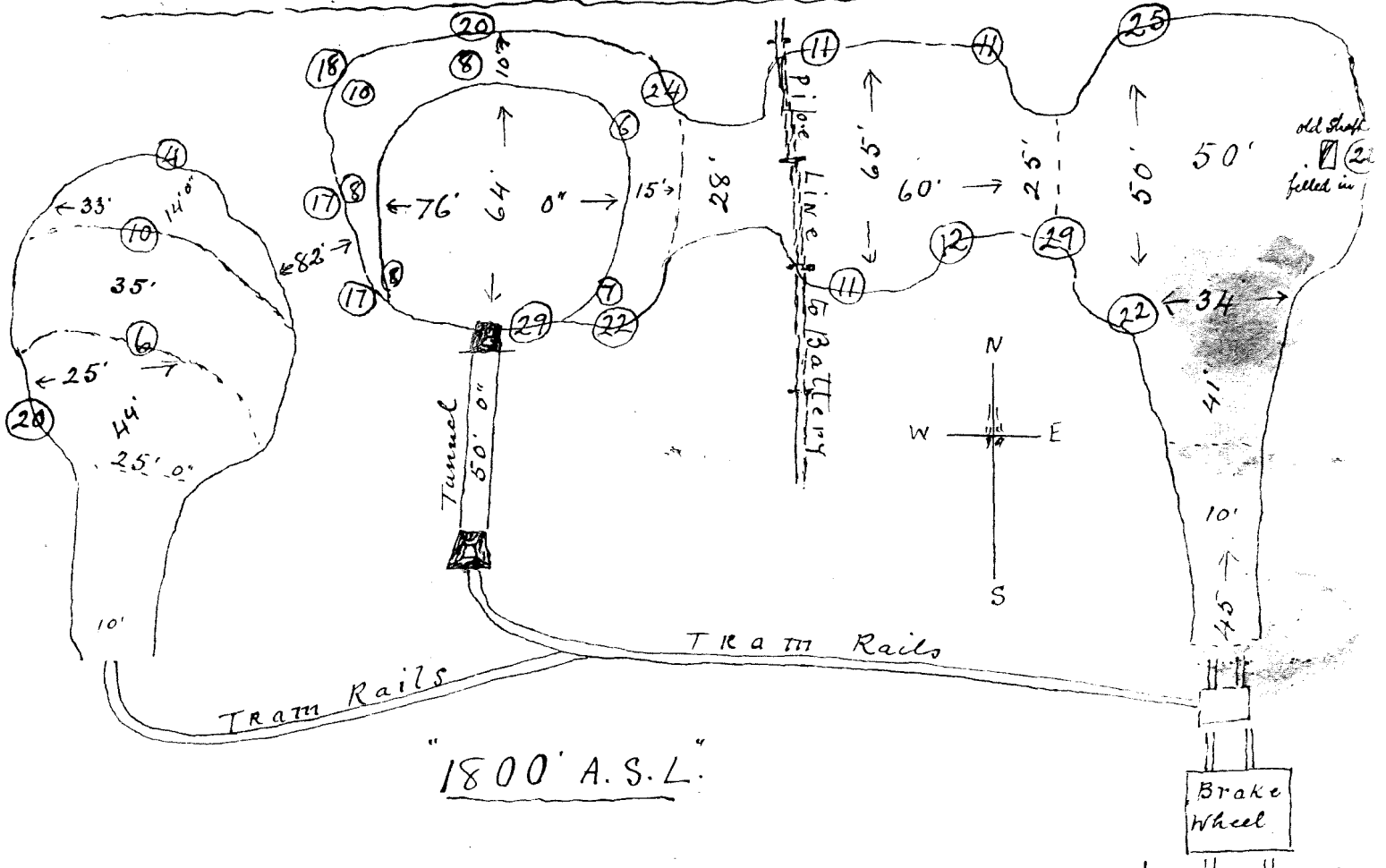
Lutke Williams
Lottah. Tasmania. Nov 19th 1904

Notes on Wooley's Tin Mine, Lottah. Tasmania

Situate East of the Australian Tin Mine. & North of the Anchor.
about ¼ of a mile East of the Don Face.
area two 5 acres and one 10 acres on the line of Lode
Lode North and South course.
Underlay West- 1 in 5.
The Lode has been proved for a length of 727 feet.
the rise in the hill where the Lode is exposed is 510 feet.
The outcrops of the Lode is now being sluiced by 2 men
they have obtained 5 tons of Tin during the past 7 months
Sample bag No 84 is an average of the Lode for a
length of 529 feet. 230 feet deep and 9 inches wide.
In places the Tin shows in large crystals.
The country granite near the lode is soft & easily worked
Large quantities of Tin has been obtained by sluicing
the surface near the South boundary of the ground by former
owners.
The Mine is about ½ a mile North of the Anchor.
I washed alluvial on the North part of the property
from 1 foot to 7½ feet deep. 6 holes averaged 2'6" deep
the Tin oxide obtained equalled 5·62 lbs of Tin oxide per cubic
yard. This is a promising mine as the Country is full of
Tin veins in a soft formation.
The owners ask £1000 Cash for the Mine as it stands.
It would be worth acquiring at a price with other properties.

Luke Williams
Lottah. Tasmania. Nov 19th 1904

Notes on the Open Cuts at the Liberator Tin Mine near Lottah Tasmania. Nov 19th 1904.



"1800' A.S.L."

The above represents a rough sketch plan.

Sample Bag No. 86 is an average of all the ore in the above Open Cuts.

The figures in a circle thus (29) indicates the depth of the Cuts.

The Course of the ore bearing Stone is supposed to be East & West.

The total distance proved by these Cuttings is 318 feet long and 74 feet wide, but the Surface indications show a much greater area as yet unproved.

10.284 tons of Tin Stone were crushed from these 3 cuttings for a yield of 9.718 lbs of Tin oxide per ton of Stone.

The average assay of the Tin oxide gave 72% Metallic Tin.

Luke Williams
Lottah. Tasmania. Nov 19th 1904.

Copy of Cable sent to Messrs Knosc & Schlapps by Luke Williams from Lottah. Tas. Nov 18th 1904

applicants – The approximate assay value
Entailment – Gold
Unifoil – 2 dwts per ton
Laf – and a half } 2½ dwts per ton
Pinmakers – Silver
Unlettered – 15 ounces per ton.
Gloriable – Lead
Unturbaned – 10½ per cent
Snowslip – Zinc
Upbraideth – 41 per cent
Gramashes – Please refer to my (own) letter
Vbices – 23rd of September
Williams – Luke Williams.

Copy sent Gen. 28/11/04

Luke Williams, F.G.S. (London)

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11.2.04

Blue Tier, Lottah. Tasmania.
Novr 22nd 1904

Messrs Kruse Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

I came up to the Blue Tier yesterday morning to examine the Mines here, in the evening I received your telegram of that afternoon (by messenger from Lottah.) I at once sent a telegram to Mr Hodge as per copy herewith and I also wrote to Messrs Hodge & Mr Quinn, so as to make sure of their getting the wire, Today I have written to Mr Moyle asking him to go to Rosebery and see Mr Hodge and arrange to have the fifty tons of ore bagged and sampled & to post the sample to me here, and I will then send it to you, I did not think it advisable for Mr Moyle to post the sample direct to Mr Norfolk but if you wish it I will advise him to do so, I take it that you want fifty tons of the zinc ore at £2.0.0 per ton as per my letter of the 23rd Sept & Hodge's letter which accompanied it.

Yours Faithfully
Luke Williams

P.S. The box of Ore Samples & Specimens sent you will go by Holyman & Sons Steamer to Melbourne, from St. Helens. L.W.

Luke Williams, F.G.S. (London)

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Copy of Cable received from Mr R. Norfolk by Luke Williams. November 21st 1904

Wastree – Refer to your Cable of the 18th
Arbitrable – you must arrange as soon as possible to
Pholadomya – Ships
Unfetter – (50) fifty tons
Snowstorm – Zinc ore
Phospor? (Phosphor) Escpedite the Shipment
Readopted – Telegraph
when – when
Phraseman – Shipped

The same evening I Telegraphed to Mr W. J. Hodge Primrose Mine Rosebery

Please Ships fifty tons Zinc ore immediately to me at Sydney, according to your offer last September, writing.

Luke Williams
Nov 21st 1904

Luke Williams. F.G.S. (London)
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1/12/04 BC

Lottah. Tasmania
November 26th 1904

Messrs Knox Schlapp & Co
163 William Street. Melbourne.

Dear Sirs

Since writing you on the 22nd inst I have rec'd your letter of the 18th inst enclosing cheque for £ 33. 0. "ƒ in payment for Out-of-pocket expenses incurred during my Mt Read and Waratah districts, mine examinations, for which I thank you kindly.

Primrose Ore. I have not yet received any reply to my telegram & letters of the 21st & 22nd inst to Messrs Hodge and Quinn but may hear any day now. Mr Moyle will have rec'd my letter yesterday so I shall probably have a reply from him early next week. I noticed in a Launceston paper this week that Mr Hodge had made a Contract with the Tasmanian Smelters for 20,000 tons of fine Sulphide ore. If I don't hear something definite from him next week perhaps it will be advisable for me to go to Rosebery and make a bargain with him on the spot. He is a very dilatory and forgetful man, and is now probably carried

away by the fact that he is the leading Tributor in the Zeehan district. His foreman (Mr Paul Quinn) is a good business man in some ways, but of course he has not full authority in such matters. I fully expected a letter in reply tonight but did not get any. However I am sure that Mr Moyle will push the matter now that he has instructions from me.

Anchor Tin Mine. This is the first year that they have been able to show a profit, previously they had a loss of £5000 a year, then £1750, now it is paying, and with 200 heads of Stampers the Manager estimates that he could make a substantial profit.

Zottah Mine. As I could not get into this mine any distance (only 70 feet in the lower tunnel and 234 in the next one above) it was useless to sample those short lengths, the twistmes marked A & B were "Specimens" to show the class of ore in the Mine. I will not spend the £10 or £12 it is not needed I am now busily engaged sampling the Haley's Lease Mine, it is one of the best Mines on the Tier and was once part of the New Moon property. it is a big Mine with big possibilities, Next week I will sample the "Moon" Mine, There are enormous quantities of Tin Stone on the Blue Tier and I am impressed with its future possibilities, more details in my next Report.

Herewith enclosed please find Receipt for £33.0.7. Note on the old Ethel and Ida Crowther Sections.

Yours faithfully
Luke Williams

P.S. Messrs Hodge & Quinn's letters received, enclosed with yours of the 22nd inst. for which I thank you. L. W.

Notes on the old Ethel Tin Mine, Blue Tier. Tas.

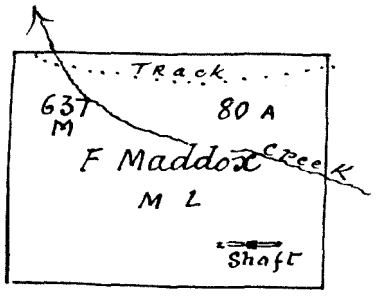
This property is North and adjoining the Australian Tin Mng Co. property, and is on the Northern slope of the Puzzle hill on top of the Blue Tier, and on the line of the Main "Lode" or dyke.

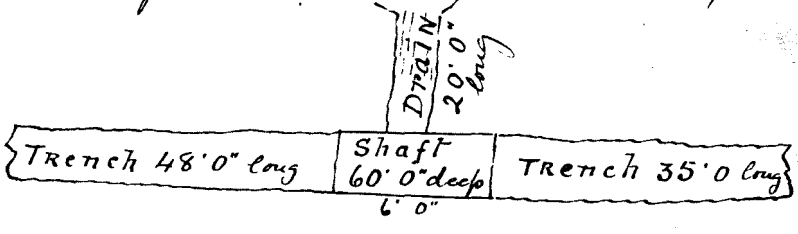
It is now charted in the name of F. Maddox and is contained in Section No 63 M. 80 acres.

Several trenches have been put in across the formation and it has been stripped by sluicing off the surface in a creek close up to the summit of the outcrop on the top of the Puzzle hill.

The main workings consist of a shaft sunk to a depth of 60 feet, with trenches East and West of it.

The shaft is located about 6 chains West of the Eastern boundary and about 3 chains North of the Southern boundary thus.





This shaft is full of water, also the trenches and they are all overgrown with moss and ferns, and the the heaps of stone were in the same condition as they have been lying idle for over 15 years, consequently I did not think it advisable to take any samples from here.

These workings are undoubtedly on the line of "Haleys dyke."

Mr A. Montgomery in his Report on "The Blue Tier Tin Field" 5th November 1889 states of the Ethel Mine

(2)

Notes on the old Ethel Tin Mine—Continued—

"Haley's dyke passes South from Crowthers' Section into
"the Ethel Company's ground. about five chains South
"of their Northern boundary a shaft has been sunk to a
"depth of about 60 feet, fair tinstone being met with through
"-out it. It is now full of water.
"Several trenches have also been dug exposing the porphyry.
"The dyke is here over a chain wide, and further South
"it is said to widen out to 9 or 10 chains, and to be
"traceable for three-quarters of a mile. Its course is still
"about North and South. Good prospects are obtainable
"from it in many places, and it always carries some Tin
"Ore, while really good stone is often seen in it.
"The head of a branch of the Crystal Creek has been worked
"for alluvial tin ore, exposing the porphyry for a con-
"-siderable distance. The sluicing operations have laid
"bare a good many thin tin-bearing quartz veins in this
"ground as in other parts of the district.

Mr G. Thureau, who inspected this field in Feby 1886
writing on this same ground stated (The Lottah Extended 6°)
"have likewise traced this stanniferous dyke for a considerable
"distance . . . one of their shafts was sunk to a depth
"of 60 feet, proving the dyke to be at that depth still as
"rich in ore as anywhere else on its course.

This property would be valuable to work in with
the Australian, and the Haley's Lease Tunnels.

Lottah

Luke Williams
Blue Tier Tasmania
Nov 26th 1904

Notes on the Ida Crowther Section, Blue Tier. Tas.

This Section was formerly between the Ethel Section (on the South) and the Haley's Lease on the North.
It is now included in the Sections 577 and 637 held in the name of T. Maddock.
It lies on the Watershed between the Wynyard River and the Crystal Creek and drains into the former.
It has been worked for alluvial tin ore, the ore being found in the shallow surface soil about two feet in depth. The granite laid bare by the working of the surface is full of small quartz veins. These frequently carry good tin ore.

Undoubtedly the Tin formation worked in the Haley's Lease passes through this ground, and it seems almost incredible to think that absolutely nothing has been done to prove the dyke formation for Tin.

I consider this a valuable part of the Haley's dyke formation, and would work in well with the other properties if they are being acquired.—

Mr Montgomery in his Report on The Blue Tier Tin Field 5th November 1889 states ... "The tributer (Jas Willing) "told me he had got 7 tons of black tin in 3 months "at a cost of £5. a ton. Owing to the flatness of the "ground the stuff has to be sluiced by hand in boxes."

Luke Williams
Blue Tier. Tasmania
Nov 26th 1904

Lottah

Full copy sent Directors 13 Dec & by Mgr. 17th Dec.

Luke Williams, F.G.S. (London)

First Class Certificated Mining Manager; Tasmanian Government
First Class Certificated Mining Manager, The Chamber of Mines of Victoria, Melbourne, Australia.
Certified Assayer; Tasmanian Government, Laboratories.
Member of the American Institute of Mining Engineers.
Member of the North of England Institute of Mining & Mechanical Engineers.
Member of the Australasian Institute of Mining Engineers.
Member of the Federated Institution of Mining Engineers, England.
First class Certificated Mining Manager New Zealand Government.

Lottah. Tasmania, Decr 3rd 1904

Messrs Kuroe Schlapp & Co
163 William St. Melbourne.

Dear Sirs

I have to acknowledge receipt of your letter of the 25th Nov and wire of the 2nd inst as per copy enclosed. I wired Mr Hodge to supply me with 50 tons of his Sulphide ore immediately, but he says he cannot do so by his agreement with the Smelting Co, his letter of the 28th Nov I enclose herewith, the zinc Market is very active on the West Coast and he now thinks £2.15.0 per ton a fair price. I have wired and written to Mr Moyle to try & get 50 tons of Mt Read or Hercules ore immediately, but am afraid it will take too long to get the Mt Read parcel broken & bagged as it is now in the heap as mined. The Hercules Co will ask the full market value for their ore, Hodge is waiting for a reply as to whether we want the 50 tons from him by the end of Decr, I am urging Mr Moyle to do all he can to get the ore, for you, but I am afraid the time is too limited. Herewith please find Notes on the Haley's Lease & Full Moon Mines, Blue Tier, I hope to complete the Tier inspections

during the week-fortnight, I am working hard at it from before 3 and 4 o'clock every morning, and till dark in the field to push the work. Yours faithfully
Luke Williams

Luke Williams. F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
CERTIFIED ASSAYER; TASMANIAN GOVERNMENT, LABORATORIES.
MEMBER OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE NORTH OF ENGLAND INSTITUTE OF MINING & MECHANICAL ENGINEERS.
MEMBER OF THE AUSTRALASIAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.

First class certificated Mining Manager New Zealand Government.

Copy of Cable received Dec 2nd 1904 from Kuroc Schlapp & Co.

Waymark	—	Refer to your Cable of the 30th
Cannot	—	Cannot —
Wait	—	wait —
Raingauges	—	Will take
Unfetter	—	fifty tons
Mountet	—	Mount —
Read	—	Read
or	—	or
Hercules	—	Hercules
if	—	if
Kismet	—	Can be obtained from
during	—	during
Inequitable	—	this Month
Wire	—	Wire
Knightpoor	—	Can you obtain
When	—	when
Phonograph	—	Can you ships.

L.W.

£2. 15. 0 per ton

Under these circumstances and as our first arrangements fell through I do not think it would be fair to myself to supply the 50 ton parcel of blende to you at the low figure of September last.

I am

Yours truly

W J Hodge

Rosebery 44

Nov 28th 1904

8/12/26

Luke Williams Esq

Lottah

Dear Sir

I would have replied to you sooner but I wanted to see the Smelter people and learn whether they would object to me selling a 50 ton parcel of sulphide ore to you I told you when you were here that under my contract with the smelters I am not at liberty to sell sulphide to any other buyer. I find they do not like the idea of my selling it elsewhere which I am supplying

my present contract

While I was away your parcel of blende was being broken and bagged and marked with a special brand but not being able to find your address at the time we stacked the bags at the siding and on my return I entered into another contract to supply the Smelters with a parcel of 350 tons

It was just at the time of my entering into this latter contract that your telegram reached me asking me to supply you with sulphide instead of blende.

As I could not supply the sulphide for reason already stated and thinking you did not then require the blende I contracted with the other people. Therefore the best I can now do is to supply you (if it will suit you) when the 350 ton contract is finished which will be about the end of Dec.

The parcel of blende that we were breaking when you were here ass-dyed 38·5% and netted £2·6·0 on the trucks at our siding the parcel we are breaking now is being classed with more care and with the sharp rise in in the marked price of spelter should be worth at least

Notes on The Full Moon Tin Mine, Blue Tier, Tasmania.

The main workings of this property is now held in Sections No 554 40 acres in the name of F. G. Duff, and 3834 (3834^{M}, 38 over 93M), 20 acres in the name of W. P. Kirwan, situate a little North of the town of "Poimena", being within a quarter of a mile.—

In the early days of Tin Mining in Tasmania this Co made large profits by Sluicing the drifts from the Moon Creek, and 18 Bucket creek, the latter being so name from the fact that 18 buckets or 18 cwts of tin oxide were obtained per day when sluicing, and all this was wheeled by barrows into Sluice boxes.-

Down to 100 feet in depth up to the end of 1885. a total of 875 tons of ore (black tin) was won, valued at £36.000 out of which £20.000 was paid in dividends; the original working Capital was £6.500.

I feel convinced that the Lottah Lodes will be eventually proved to run into the Moon ground, as they are undoubtedly in the same lode channel.

The Lottah veins or Lodes run 10° west of North. The Full Moon tin veins are I think a "Stockwerk", some of them have a well defined course of S. E and N. W while others run into them and junction with them having a North and South course.

The Main Lode Channel passes through the low saddle of the Tier at 2650 A.S.L. from the Lottah or Eastern Slope and then follows down a gully to the West. The Ore-bearing Channel being from three to four Chains wide with veins carrying tin coursing through it in all directions.

The whole of the Surface along the Lode outcrops has been Sluiced for Tin, some of the ground having been worked three times profitably. It is now being Sluiced again in some parts.

Notes on the Full Moon Tin Mine, Blue Tier, Tasmania – Continued.

A Shaft is reported to have been sunk to a depth of 120 feet by a horse whim some 20 years ago on the veins mentioned as showing in the gully. Some of these veins are from one to two feet in thickness, and have the appearance of Tin Lodes running through the main ore channel.

It is reported that drives to the extent of 700 feet in length have been put out along the veins of stone at the bottom of the 120 feet shaft. the brace of this shaft is 2500. A.S. level

Some of these tin veins are vertical, others are underlying in every direction.

Abmt 1 chain North West of the shaft an East & West Elvan (basalt) dyke passes through the veins, these basalt dykes are common to this field and good tin is nearly always found near them. In Cornwall they are called Elvans and are considered to be near the best bodies of Tin stone.

Abmt 15 chains Westerly at a bearing of 290° is the large Full Moon Outcrop at 2430 feet above sea level. and 220 feet below the Saddle previously referred to, and which is abmt half a mile away.

This Main Outcrop is close to the old battery ~~hike~~ and is I think a continuation of the veins and formation on which the shaft has been sunk, (though I have not heard that this belief is held by anyone else it being generally supposed to be another lode).

The course of this big outcrop is 280° or 10° North of West. I carefully measured it from North to South (its width) 363 feet. and from East to West (its length) 200 feet, and where

Notes on The Full Moon Tin Mine, Blue Tier, Tasmania.—Continued—

excavated it is exposed for 20 feet in depth.

This mass of tinstone could be open cut to a considerable depth but it would require to be drained by pumping, Machinery or a tunnel from the Lobbah side of the Tier. The Lobbah low level tunnel would come in 500 feet below this outcrop and over 700 feet below the saddle through which the mass of tinstone runs, the total distance would be about a mile, the whole of the driving would be on the course of the tinstone. I think eventually it will be found that this body of tinstone passes through a low saddle about 20 chains West of the outcrop and then junctions with the Haley's dyke at what is known as the Haley's Extended (otherwise Moon Extended) shaft, there being a mass of good tinstone at that spot.

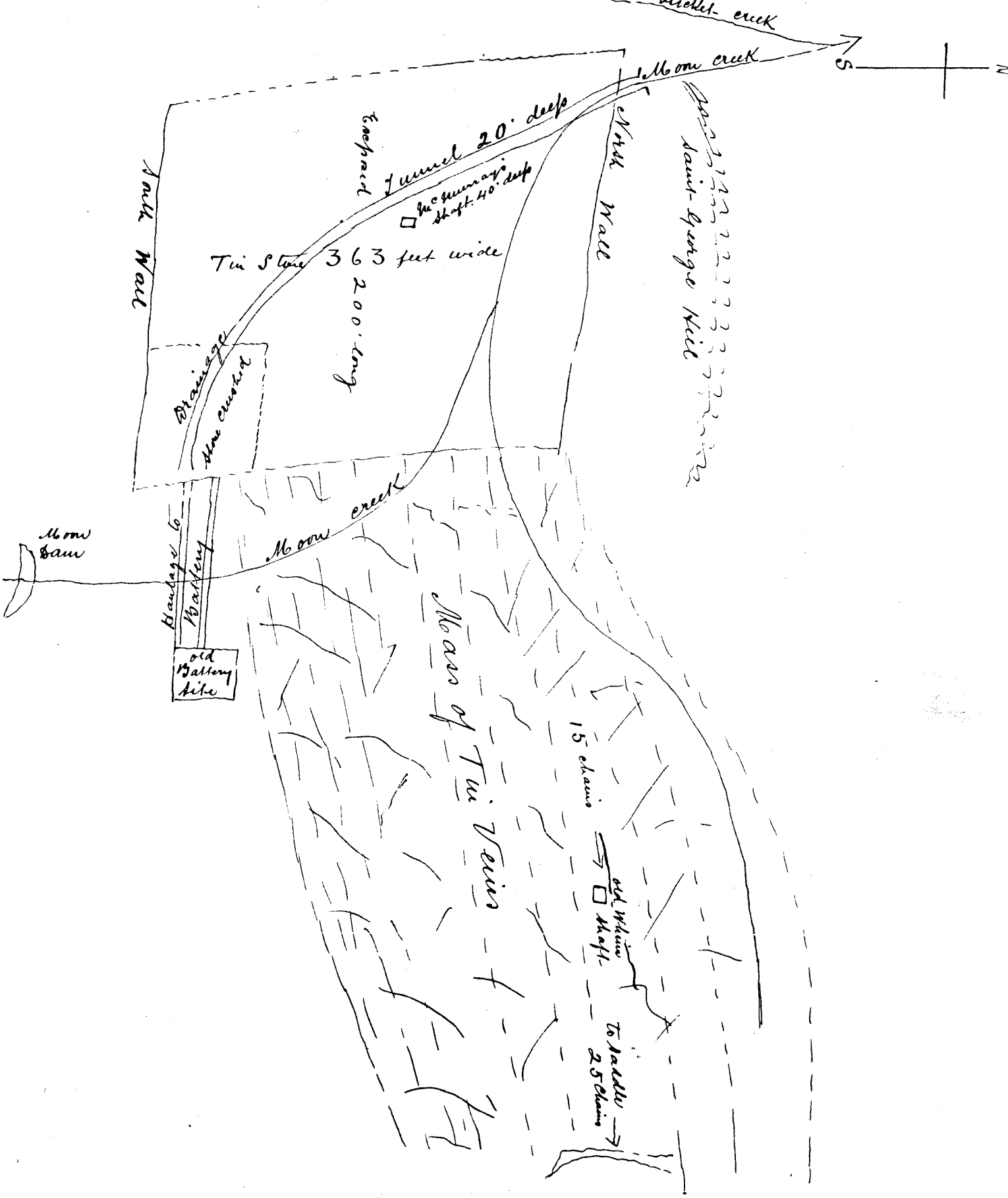
The Full Moon Co put up a Huntingdon Mill and in 1890 crushed 2088 tons of tinstone for a yield of 26 tons of black tin the average assay of which was 62% Metallic tin. the value in cash £1500. The percentage of tin oxide obtained was 1.2456% worth per ton of stone treated (14/4.) fourteen shillings and four pence. This would appear to be an average of the mass of tinstone exposed at this spot. the low average assay was accounted for by the imperfect system of dressing the ore.

The ore from the Moon mine has proved the best so far of all the mines on the Tier.

Mr McMurray told me some years ago that the average value of the ore his shaft passed through for 40 feet in depth was 3% of tin oxide.

What the Mine requires to thoroughly test it is to be bored by a Diamond drill in the tinstone shown on page 4.

Rough Sketch of the Full Moon Tin Mine Ore bodies. Tasmania.



Notes on The Full Moon Tin Mine, Blue Tier. Tasmania - Cont-

After proving the ore to be worth 1·2456 lb of tin oxide at the big outcrop, the New Moon Co began erecting a 30 head battery but before it was erected the Bank of Van Diemans failed, & it was never completed, but was sold and removed; since then (1892) the mine has been idle, practically abandoned so far as mining and crushing are concerned.

With a proper testing of the ore bodies by a diamond drill I believe the Moon property will be found to be a good Tin Mine; it has a good record and a good reputation, but for the failure of the V. D. L. Bank I believe it would still be at work, but since the Co^ns who have held it began lode mining they have always been short of Capital, and a 5 feet Huddington Mill is not sufficient crushing power to make a Blue Tier Tin Mine pay. If the average value of the stone is equal to that already crushed, there are large quantities which could be mined to 20 feet deep which should give from 5/- to 7/- a ton clear of all working expenses.

This mine requires working with others in a large way of which I shall say more in a finial report after I have completed my inspection of all the mines on the Blue Tier.

Sample bag N° 92 is from the big Tin formation on the Full Moon Mine.

Lukie Williams

Lottah Tasmania

Dec 3rd 1904

Notes on the Haley's Lease Tin Mine, Blue Tier Tasmania.

This property now consists of 20 acres only, being Section No 573.M. charted in the names of J. Ogilvie and T. J. K. Bakhap. Originally it formed part of the Haley's Lease Tin Mine. When it was owned by the McGough Tin Mg Co and afterwards it formed a portion of the New Moon Tin Mine. The whole of the Mine workings are held in these 20 acres. The Haley's dyke formation has for nearly 20 years past been looked upon as the most valuable tin dyke or tin bearing formation on the Blue Tier from its great length and width, its persistent course, and the large quantities of tin which have been won from it.

A large amount of the soft portions of the dyke has been sluiced for tin with good results, and a battery of 15 stampers and a 5 feet Huntingdon Mill were erected on the Mine and driven by Steam which was very costly owing to the difficulty of obtaining good steaming firewood in the early days.

From May 4th to Nov 11th 1892 the Co (New Moon) raised and crushed from this Mine 503 4 tons of tin stone for a yield of 32. T. 13. C. 1. qrs. 23 lbs of tin oxide which realised £1643 net, equal to 6/6.28 per ton of stone treated.

The percentage of tin oxide won was 0.6486%.

The highest assay was 74% and the lowest 65.8%

The average assay was 69% metallic tin.

There is no record of the value of the tin before it went to the battery, or of the losses from the dressing Machinery, but the losses must have been

Notes on Haley's Lease Tin Mine, Blue Tier, Tasmania.

heavy as the crushed stuff flowed direct from the Stampers and the Huntingdon Mill on to Frue Vanners without any classification, which is a great mistake. —

The battery was situate about 15 chains away from the working faces, and the stone was taken to the battery by a horse tram, which was costly.

The working Costs were. —

	s.	d
Mining and delivering to battery, per ton	2.	3
crushing and dressing —————— " " —	4.	3
All other Costs including, including freight & Management. ————	4	—
Total Costs	10.	10
Cash Value of 5037 tons of stone treated	6.	6½
Loss per ton of stone treated. ————		3¾

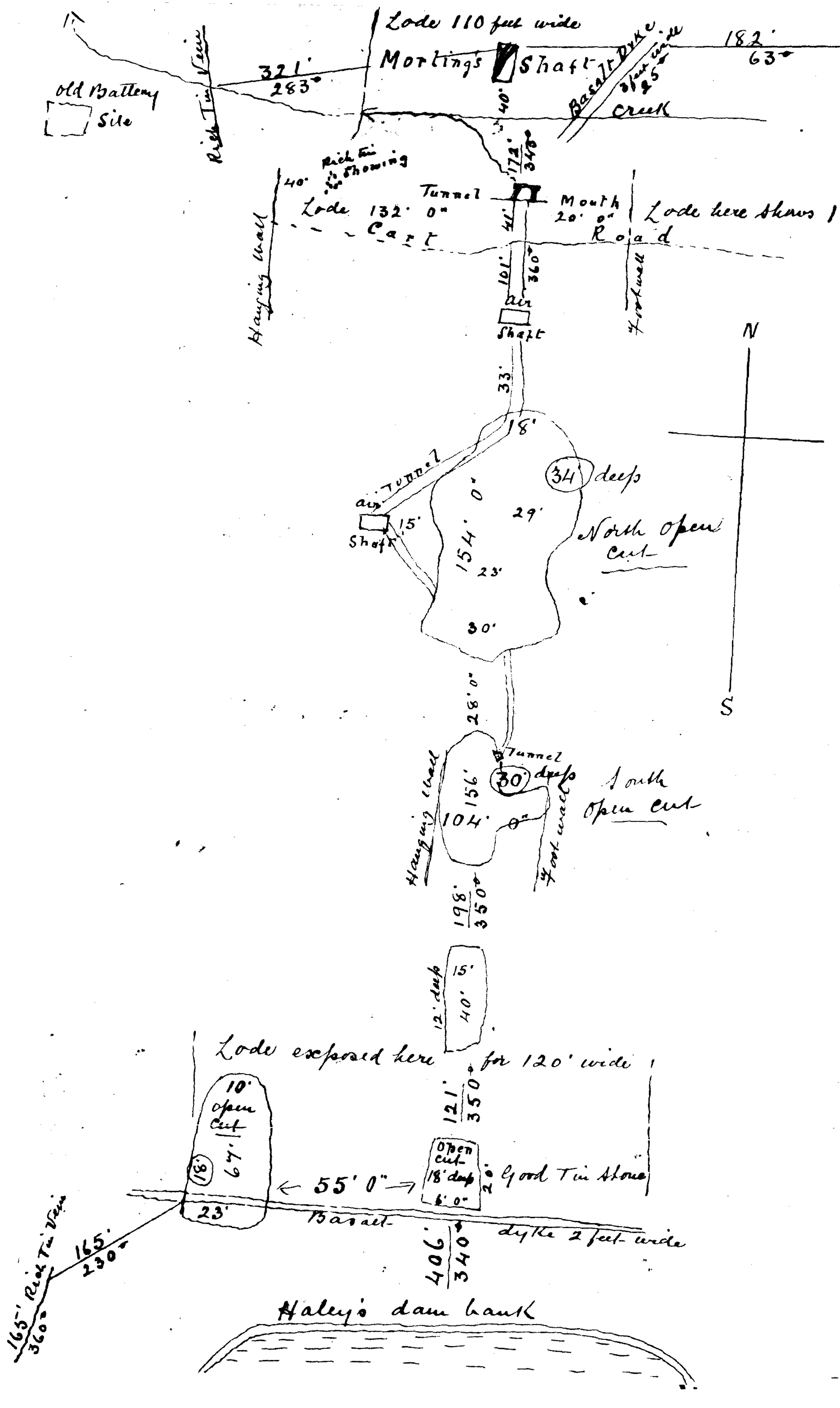
Owing to the boiler not being of sufficient capacity to drive the whole plant in wet weather the bulk of the crushing was done by the Stampers which made the work more costly.

With water power that stone should have given fully 4/- per ton profit.

The Stampers were rather light and their full Capacity was 2 tons per head per 24 hours.

The Cash value of the above tin at present price £137 per ton would be 12/3 per ton of stone treated.

I understand that larger quantities of tin stone were crushed, but those given are all that I have a record of.



Sketch of Haley's Lease Workings Dec 1904 (3)

Lode worked for over 1000 feet in length and 152 feet wide

2500' A.S.L.

Notes on The Haley's Lease Tin Mine, Blue Tier, Tasmania.

The Outcrop of the Lode is 2500 feet above Sea level.
The Tinstone has been proved continuous for over 1000 feet in length.
The width proved is is from 104 to 152 feet.
I made the following measurements.
From the most Southern Open Cut, to the North drive in Morlings Shaft is 1018 feet on the line of Lode.
At the Southern Workings the Lode is proved 120 feet wide and the Western wall has not been reached. —

At the big South Open Cut (379 feet further South) I found the Tinstone 104 feet wide.

At the Tunnel Mouth it is 152 feet wide, at this place rich tin is to be seen in the Surface Stone, 40 feet from the Western Wall.

In the flat North of the Creek at Morlings Shaft the Lode is well defined for 110 feet in width.

This Shaft (Morlings) was sunk over 15 years ago, and I heard various rumours as to its depth and the value of the ore in it. After a Conversation with the owners of the present Lease, they agreed to spend two days in baling out the water and clearing up the sill in it, they could not bottom it in that time so I agreed to pay 4 men 7/6 each for another day to bottom it, which we did.
The Shaft is 20 feet deep, a drive North 14 feet and South 4 feet has been put in at 17 feet deep.
There is some splendid samples of Tin Stone in this Shaft.
The Stone in the bottom is quartz porpphyry and making a good deal of water. I sampled the Shaft on both sides from top to bottom and across the back of the North drive.

Notes on the Haley's Lease Tin Mine, Blue Tier, Tasmania.—

The soft tinstone is often rich and so is some of the very hardest— this is a feature of the district—, that no formation is either too soft or too hard to carry rich tin.

Outside the Main dyke or Lode there are numerous veins of Tinstone (some very rich in tin) which indicate a great width of tin bearing ground.

A Tailrace from near the old battery site 8 Chains long would drain the Mine about 25 feet deeper, and 20 Chains of Tailrace would come in about 50 feet below the present Tunnel level.

A considerable amount of this drain is now from 10 to 12 feet deep and the bulk of it would be through soft granite). below that level the water will have to be pumped, unless the deep adits from the Lottah or Puzzle are driven.

The Lottah Tunnel would give about 600 feet of backs for about 3/4 of a mile of drive and the Puzzle adit would give about 1000 feet of backs if driven from the Australian Tin Mng Co's battery, a little over a mile, but this latter drive would be on the course of the lode all the way. The Lottah deep adit could also be driven on the course of the Lodes to the Tull known Mine and then crosscut if desired.

Sample bag No 90 is an average of the whole of the stone in the large North and South Open Cuts where the battery stone was obtained.

Sample bag No 91 is an average of Morling's shaft for 20 feet deep.

With water power for crushing I consider this property would be a profitable mine to Investors. It's previous want of success being entirely due to want of Capital and an inferior supply of steam power.

Luke Williams Lottah, Tasmania
Decr 3rd 1904

Sent Geo mgr 2/17/04

15/12/04

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Lottah. Tasmania, Dec 10th 1904

Messrs Knox Schlapp & Co

163 William Street, Melbourne.

Dear Sirs

This week I have been working early & late to get through as much as possible of the Blue Tier inspections and am pleased to state that I have made good progress Next week I have the Kent, Cream Creek & other mines on the Western Slopes of the Tier to examine, and a mine on the North end of the Tier, also some smaller ones on top of the Tier, and then complete my examination of the Water Storage facilities which I hope to finish next week. The following week I trust to be able to complete my Report on the Blue Tier Mines & Water supply, and examine the Scamander Copper Mine by the 24th inst. This week I have been at my work at 20 minutes to 4 a.m. and in the bush till 8 p.m. trying to get through the work.

This field presents enormous possibilities as the tin dykes on surface cover enormous areas and though generally of low grade, there is every appearance that they will continue to indefinite depths. There are some splendid sites for storing water which I am giving close attention to, and which I think you will be pleased with.

The Mines Department of Tasmania have written

to me stating that the annual forfeiture list will probably be published in the Gazette on the 2nd Tuesday in Dec next. (next Tuesday) and will include Blue Tier Sections upon which no rent has been paid.

The Full Moon, Lottah, Haley's Extended and other good Sections are at present held in the name of F. G. Duff.

Do you wish me to secure any of the best ones if they are forfeited?

The 20 acre Haley's Lease is held by a local Syndicate who are going to place it under offer to me for £500 Cash or an interest of similar value in a good Co° if one is to be formed.

I will not send Samples until I have completed my examinations.

I would like to know the assays of the samples sent if you will kindly let me have them.

I have been advised to inspect a big tin lode outcrop near Ringarooma and close to the Nugget tin mine, if I have time I will do so.

Herewith please find my Notes on the "Haley's Extended" Beales, Perennial, Wellington and Masker Tin Mines, also copy & translation of my Cable sent you today.

Yours Faithfully

Lukie Williams

Copy of Cable sent by Luke Williams to Messrs Knox Schlapp & Co Melbourne. Decr 10th 1904.

Mountread	Mount Read Mining Co Ltd
Pyramidion	Will Supply
Unfetter	fifty tons (50)
Spriggy	(10/-) Ten Shillings
Requitals	per ton of 2240 lbs
Icebrook	On the Mine
Gramashes	please refer to my letter
Verruca	16th of August.
Hempalm	Resident Manager of
Hercules	Hercules Mine
Nodosaria	positively refuses to
Rhizodont	Arrange for transport
Rivercrab	We are trying by all possible means
Bucco	the board of the Company
Williams	Luke Williams. Lottah Tasmania Decr 10th 1904

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Notes on the Haley's Extended. (also known as the Moon Extended. Tin Mine.) Blue Tier. Tasmania.

Situate North and adjoining Haley's Lease, and North west of the Moon mine.

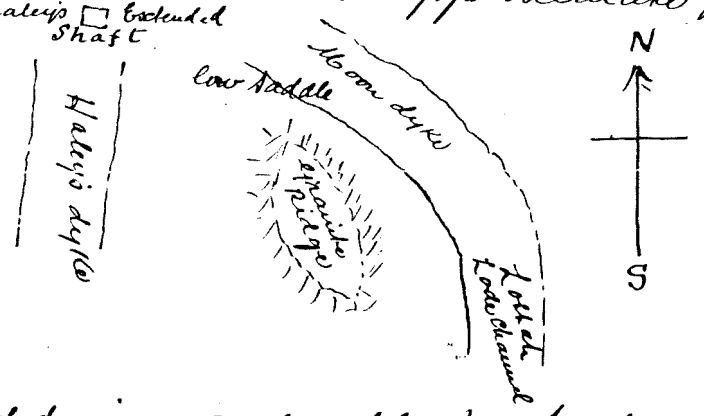
a Shaft has been sunk in the gully, to a reported depth of 40 feet. I sounded it and got 30 feet of water, probably several feet of the bottom is filled up. — This Shaft was sunk many years ago and is reported to be in rich tin stone, the bottom being the best.

An Engine was placed on it, but was too small to cope with the water, as before stated the Shaft being in a gully and I would think the drainage was considerable

Near the Shaft on the surface where the tinstone is exposed, very good tin is to be seen, but owing to the scrub and surface growths the width of the tinstone cannot be seen, it has never been determined at this point. 2410' A.S.L.

After a careful examination of this property so far as can at present be seen I believe this Shaft is at or about the junction of the Haley's Lease North and South dyke, and the Full Moon East & West dyke

The following sketch shows the approximate position



The Haley's Extended is a valuable property and should

Notes on Haley's Extended Tin Mine, Blue Tier. Tasmania. 60

be included in any leases taken up for developing the Blue Tier Tin Mines. It is very popular locally and considered to be one of the richest Mines in the Tier but worked as a separate Mine, pumping Machinery would be required from the start as it is about 30 feet lower than the creek crossing at Haley's Lease.

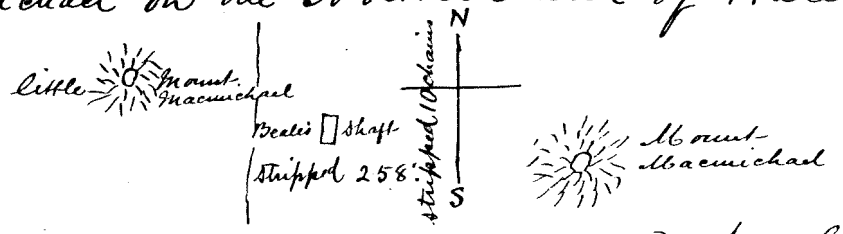
Further North (about 20 chains) I saw some very good tin being won by a hydraulic elevator from the surface capping of this same "Formation".

Owing to being thickly timbered with Myrtle, Celery top pine, Sassafras, and ferns very little prospecting has been done on the property, but from the tin to be seen and its good position, I look upon it as one of the indispensable sections on the Blue Tier Tin Field.

Luke Williams
Lottah, Tasmania
Decr 10th 1904

Notes on Beales Tin Mine, Blue Tier, Tasmania.

Situate on the ridge between Mount Macmichael and little Mount Macmichael on the Northern end of Haley's Lease dyke, thus.



The Shaft is located at 2475 feet above Sea level.
The summit of Mount Macmichael being 2700 A.S.L
Little Mount Macmichael bears 30° N of west from Beales Shaft and Mount Macmichael bears 30° S of East from Beales Shaft.
The distance between these two Mounts is about half a mile.
Beales Shaft is approximately one mile North of Haleys Lease and the Moon Mines.
The Shaft was sunk to a depth of 22 feet below Surface about 12 years ago and good tin Stone was obtained from it. Mr Beales told me that he had 4 tons of it carted to the Perennial Co. Mudie crusher and treated for a yield of a half per cent black tin, and he took an average of the bulk omitting the richest parts of the ore.
A small heap of the richest ore now stacked near the Shaft shows some splendid tin, and the best of this Stone has been carried away for Specimens and crushed. Mr Beale told me that he recently crushed and dressed (to 72%) 12 lbs of tin oxide from this Stone in two hours. this at 10° per lb present price gives 10/- for his two hours work.
Neither the width nor the course of the Ore body has yet been determined near Beales Shaft. formerly it was thought to run North and South, but Mr Beales told

me that he now considers it runs East and West, owing to the fact that the bulk of the quartz veins run E & West. The tinstone has been stripped for a width (E & W.) of 258 feet and for a length (North & South) of 10 chains near the shaft and from a patch about an acre one foot deep 15 tons of tin was obtained and sold by Mr Beale.

The shaft was full of water during my visit but I got some men and we baled it out, and I sampled it from top to bottom, both sides and ends. Sample bag No 93 is from Beale's shaft.

I noticed that the tinstone on the surface and in the shaft is in floors. Though a North and South vein showing in the shaft continues through the floors in the tinstone.

I went on to the Summit of Mount Macumichael and saw several Crystals of Tin in the stone right up to the highest point. This is an important discovery and shows the large area over which the tin occurs at this point.

The only permanent work done at this mine besides stripping the tinstone is sinking the shaft 22 feet deep.

This mine is now held by Mr C. L. Stewart, the present Treasurer of Tasmania.

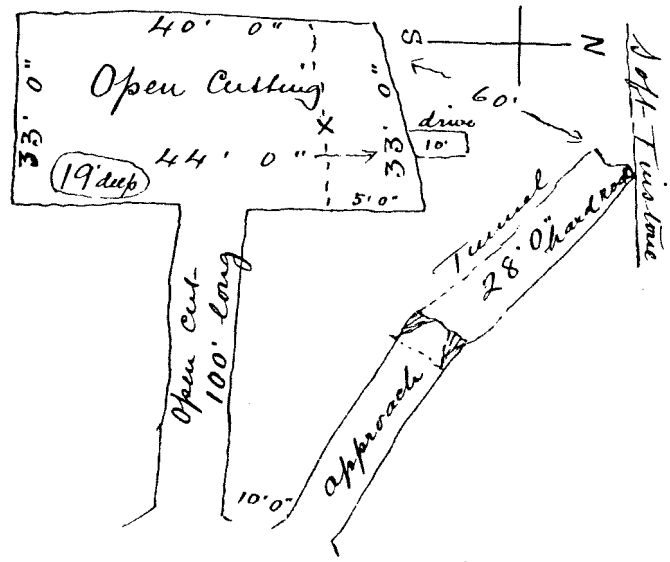
I consider it one of the important mines of the Blue Tier and the shaft would be a good site for putting down a diamond drill bore to prove the tinstone at lower levels.

Luke Williams
Lottah. Tasmania
Dec 10th. 1904

Notes on the Perennial Tin Mine, Blue Tier, Tasmania

This property is situate North West of Beale's, being about 30 chains away, and about 20 chains above the junction of the 7 mile creek and the Moon creek, on a small creek which runs into the Moon creek. A good deal of ground was sluiced in the early days up to this formation.

The Co then erected a patent Muddie Crusher, this consisted of 3 loose rollers in a trough and the trough set on rockers. the whole machine being rocked to & fro by a small steam engine. 9 tons of tin was obtained in this primitive manner, but nothing is known of how much was lost. The total ground worked consisted in an Open Cutting 44 feet long, 33 feet wide, and 19 feet deep in the deepest part thus.



So far as I could see there is a large amount of soft formation at the Perennial Mine well worth further prospecting, at the spot marked + Mr Beale told me that there is good tin stone going underfoot in the Cutting, but as large quantities of dirt & rock was stacked on it I could not see it, fully $\frac{1}{3}$rd of the dirt broken in this Cutting is still stacked there.

I consider the Perennial a fair show (it is now vacant) and would advise taking it up with other blocks for future prospecting.

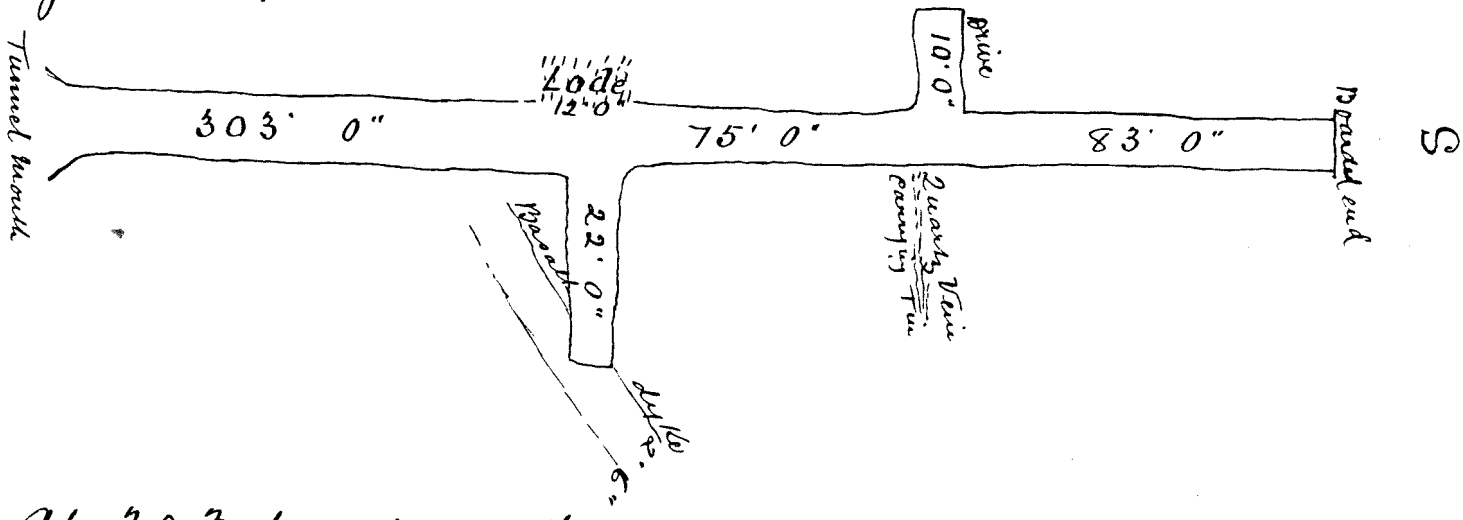
Little Williams
Lottah, Tasmania, Decr 10th 1904.

Notes on the Wellington Tin Mine, Blue Tier, Tasmania.

The Wellington Tin Mine is situate on Camps Creek, about 20 chains above its junction with the Wynyard River, at 2400' A.S.L.

A tunnel has been driven South to crosscut the lodes, this tunnel is reported to be 494 feet long, and the last 39 feet is said to be through decomposed granite carrying ½% black tin. but as the face was boarded up and blocked at the back by the soft granite I could not see that part of it.

I managed to clear the tunnel (which was full of water) and got 461 feet into the tunnel as per sketch hereunder.



At 303 feet in the Tunnel the first Lode was cut, 12 feet wide, course East & West. the North Wall standing nearly vertical, and carrying fair tin in the soft flucan against the wall, the Country up to this point is very hard clean granite, it then improves and ~~and~~ the Lode is mostly soft decomposed granite with bands of quartz and lode tinstone for the 12 feet in width referred to.

A shaft has been sunk 80 feet on this lode and connects with the tunnel. At 75 feet beyond the North Wall of the No 1 Lode a small drive has been put in East for 10

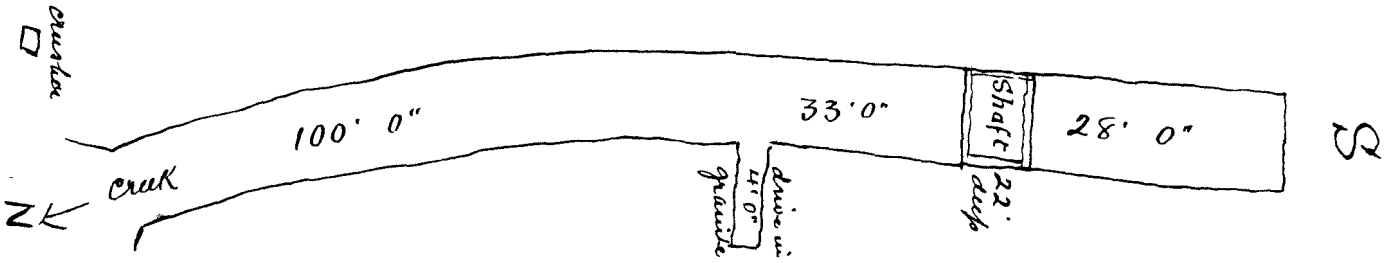
feet on a quartz vein about a foot wide, and from which I got a little tin by crushing a piece of the stone.
About five feet from the face of the tunnel some lode quartz is to be seen, apparently the North Wall of the big formation.
Some years ago sluice boxes were placed in this tunnel and a nozzle directed against the soft formation in the end. but owing to the boxes not having sufficient fall, they blocked up with sand and filled the tunnel so that no work of any extent has been done on the mine and certainly nothing has been done to prove the Lodes in the tunnel.
On the surface two shafts have been sunk, the first 80 feet on the 12 feet lode, and the second 35 feet on the small lode showing in the East drive.
A little sluicing has been done on the Cap of the big soft "formation" but nothing of any extent.
I was disappointed in what I saw at the Wellington mine, but I know that in the early days it was sadly mismanaged and nothing seems to have been proved. however it may be worth further prospecting if the larger scheme is taken in hand.
Sample bag N° 94 is from the N° 1 Lode in the tunnel an average of its full width of 12 feet.

Luke Williams
Lottah. Tasmania
Dec 10th 1904

Notes on the Masher Tin Mine, Blue Tier, Tasmania.

The Masher Mine workings are situate about five miles by foot-track North West of Haley's Lease at 2220 feet A.S.L being on the North Western fall of the Blue Tier, and on the Eastern side of the Wynyford River about 1½ mile North of the lower Reservoir proposed site, and 30 feet below the level of the proposed dam bank site.

There is a small open cutting up to 9 feet wide & 161 feet long with a shaft sunk in the bottom of the open cut 22 feet deep, making a total of 37 feet below the surface thus



The lode is reported to have been 5 feet wide and to be dipping South, but I could find no tinstone any where in the open cut, though I saw some very nice samples of Tin on the bank which had evidently come out of the shaft, this being full of water I could not test it beyond taking the depth.

There must have been some Tin Stone taken out of this mine the Open Cutting being 15 feet deep, And a small set of crushing Rolls driven by an 8 feet diameter Water wheel was erected, I consider it too small to recommend to you at the present time, but it may lead to other discoveries, later on.

Luke Williams
Lottah. Tasmania
Dec 10th 1904

Luke Williams. F.G.S. (London)

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First-class Certificated Mining Manager New Zealand Government.

Lottah, Tasmania
Dec 17th 1904

Messrs Kruse Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

Since writing you on the 10th inst- I have received your letter of the 14th inst-, contents of which has been carefully noted, also your wire of the 17th inst- reading:—

Isogonic — you need not
Ridinghood — trouble
Mount-Read — Mount-Read
Lavish — Ore

I immediately wired to Mr Moyle:— "Unnecessary to trouble any further regarding Zinc ore from Mount-Read. Primrose Ore. The reason that- Mr Hodge cannot- deliver any ore to me before the end of the year was on account- of his having entered into a Contract- with buyers for the European Market- and it- would take him all this month to get the parcel ready for that- order, his output- is limited and he can only take on one order at a time, you will

notice this fact, as in his letter to me he stated that he was preparing and stacking the 100 tons of zinc ore for me in case we required it, but as we did not take it when offered he made a fresh Contract with the Tasmanian Smelting Co (Australian Metal Co) and delivered it to them.

The Directors of the Hercules Co wrote me on the 13th inst in reply to my letter stating that the matter of carrying ore on the tramway is left in the hands of Mr Thow, be good enough to apply to him. They had probably written to Mr Thow telling him to take this lot of ore over the tram and I was on the point of telegraphing and writing to him when I received your Cable this afternoon stating "you need not trouble Mount Read ore". I am sorry that the delay in getting this ore has been long, but when dealing with men like Mr Hodge the only way is to strike a bargain at once when he makes an offer. Shall I advise him that I will not require the fifty tons at the end of this month as he is probably waiting to know? Kindly advise me.

Blue Tier Mines. I completed my inspection of these mines and the Water Conservation Lake today and will not be able to send my "Notes on the Mines" by this Mail but will send them by the following Mail, and will prepare my Reports at once & send them from here as soon as possible.

Scamander Mines. I expect to visit these Mines towards the end of the coming week and inspect them.

I shall be at Lottah until Wednesday or Thursday next.

and at the Scamander until Saturday morning.

A telegram to arrive at Conara up to 4 O'Clock on Saturday afternoon next will reach me if you wish to send any instructions which require immediate attention.

If I do not hear from you then I will go home to Moonah and prepare my Report on the Scamander Mines from there early in the following week.

Yours Faithfully
Luke Williams

Luke Williams. F.G.S. (London)

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"First Class Certificated Mining Manager New Zealand Government."

Lottah, Tasmania.
Dec 20th 1904.

Messrs Knose Schlapp & Co.
163 William Street, Melbourne.

Dear Sirs

Herewith enclosed please find my notes on Saint-George, Hope, Giant, Emu Flat & Dickenson's, Nicholson & Bryce, Cream Creek, Spinks, Kent, Connelly's and the East-Coast Bischoff Tin Mines on the Blue Tier, East-Coast, Tasmania. The latter mine I was advised to see while here hence it being included with the others. I hope to send you the "Conclusions of my investigations", in a condensed report, and my Report on the Water power Scheme by an early Mail, also the Samples which I have taken from the remainder of the Mines.

Under Separate Cover I am posting you by this Mail two Mineral Charts of the Blue Tier, showing approximately the positions of the Mines which I have examined.

It is impossible to give them accurately as they

have been forfeited and taken up again in different areas and positions to what they were formerly, but the positions given are near enough to locate the various Lodes and Ore bodies.

I am also sending you a Copy of Mr Ly. Thureau's Geological Plans and Report on the Blue Tier Tin Mines in 1886, but Thureau's Plan is the best one that has ever been issued Showing the whole of the Tin Mines on and around the Blue Tier.

I trust that these will reach you Safely.

My letter of the 14th inst may not catch todays Steamer from Launceston, as the Coach had to turn back yesterday owing to the road being blocked by trees across it from the big bush fires which are raging.

Wishing you the Seasons Compliments

Yours Faithfully

Luke Williams

Notes on the Saint George Tin Mine, Blue Tier, Tasmania. 72

This Mine is situate North and adjoining the Full Moon Tin Mine, just above the large "Moon" outcrop.
It is on the side of a hill which rises to a height of 2600 feet above Sea level. and 170 feet above the Moon outcrop.

There are numerous veins of Tinstone running in almost every direction, many of these veins carry tin. The main veins run East and West and have been sluiced along their outcrops for the tin shed by the erosion of the lode matter.

Two men are now sluicing the surface soil which is from 2 to 3 feet deep and winning some very coarse tin, the yield being highly payable to them.

So far as can be seen at present I do not think that any large bodies of Tin Stone will be found on the St George, but the veins may pay to work in a face from the Full Moon Open Cut. and as all the veins have a tendency to underlie towards the Full Moon deposits they can be cheaply worked.

Luke Williams
Lottah. Tasmania
Dec 19th. 1904

Notes on the Hope Tin Mine, Blue Tier, Tasmania.

This Mine is situate in the Saddle between the Lottah Mine on the East and the Full Moon on the West. The highest point of the Saddle being 2645 feet above sea-level on the line of the lode channel. There is no defined lode to be seen, but a mass of tin bearing veins are exposed now that the surface has been sluiced away in places.

These veins have 3 bearings. North and South, East & West, and South East and North West, and they intersect each other as if they were all of the same formation.

These veins vary in width from mere threads up to a foot wide in places, some of them carry rich tin.

If ever these tin Mines are worked in a large way it is possible that the Hope veins could be worked at a profit if they were all stoped in an open face and sent to the battery.

There is no doubt in my mind but that the Hope Mine is in the lode channel which connects the Lottah Mine with the Full Moon Mine, it is therefore a continuation of them.

One Man is now sluicing the surface off the veins at the Hope and though the best of it has been worked previously, he had very fair tin in his Race.

Luke Williams
Lottah. Tasmania
Decr 19th 1904

Notes on the Giant-Tin Mine, Blue Tier, Tasmania

On this property there is a large dyke of soft Quartz porphyry carrying tin.
It is exposed on a low ridge South and adjoining the site proposed for a Compensation Reservoir by Mr Rabbek.

This dyke has not been sufficiently tested to determine its true course, but it appears to be running about 12° East of North, where exposed at the edge of the Compensation flat.
At its Southern Outcrop it would appear to be a continuation of the soft granite dyke running East and West through the Wellington Tin Mine so that nothing definite can be stated as to its course or value at present.
During one of my visits I saw two men sluicing this formation with profitable results to them.
It is well worth testing by boring with a Diamond drill.
as good alluvial tin has been found on the surface and on the slopes of the hill on which it is exposed.
The outcrop on the Camp creek track is 2400 feet above sea level. being at the same elevation as the Wellington tunnel.

Luke Williams.
Lottah. Tasmania
Dec 19th 1904

Notes on the Emu Tin Mines, Blue Tier, Tasmania.

The Mines worked on the Emu Flat situate on Wickborgs creek (one of the head branches of the Frome River) have so far been mostly alluvial Mines which have all been fed by tin from the Western Slopes of the Blue Tier.

I followed the Emu Flat down to its junction with the Cream Creek and found that the whole of the Flat had been more or less worked for Tin and several parties are now engaged Sluicing out the ground left by former owners.

The drift in the upper portions of the Flat is very rough and Stoney, but the further down one goes the finer the drift becomes.

Dickenson's Alluvial Claim is near the bottom of the Emu Flat and is highly profitable at present, he having 4 wages men engaged Sluicing.

Mr Dickenson showed me some Splendid Specimens of Lode Tin Stone which he had found on what he supposes to be the Southern extension of the Cream Creek dyke. It is probable that this dyke crosses the Flat near Dickenson's Claim, as it is in a line with it, the height above Sea level being 1400 feet.

The developments at this Claim may be worth watching in the future, it is now owned by Mr Dickenson.

Luke Williams
Lottah, Tasmania
Dec 19th 1904

Notes on Nicholson and Bryce's Tin Mine, Emu Flat. Tasmania

This Mine is situate near the lower end of Emu Flat on the head waters of the Frome River, on the Western fall of the Blue Tier at a height of 1680 feet A.S.L.

At present it is being worked as an Alluvial Mine six men being engaged Sluicing away the soft outcrop of a tin lode formation, this formation runs N.E & N.W. across a tin dyke whose course is North and South at this point.

The dyke has all been stripped by Sluicing and is fully 2 chains wide here.

The tin Lode varies from 10 feet to 20 feet wide and has been worked to a depth of 20 feet deep by a hydraulic elevator and for a length of 200 feet.

The tin stone is now too hard to work with their appliances as at the time of my visit they were not getting more than half the tin.

I saw tin showing freely in the hopperings thrown out from the Race, also in the solid stone at the bottom of the open Cutting.

Near the South end of the Cutting I noticed a Basalt dyke 2½ feet wide bearing N.E and South West, this is very similar to the dykes on the Blue Tier, and the Basalt dyke generally is near the best tin stone.

From its bearing I should say that Nicholson & Bryce's Workings are on the same line of tin stone as the Cream Creek dyke.

Luke Williams
Lottah. Tasmania.
Decr 19th 1904

Notes on the Cream Creek Tin Mine, Blue Tier, Tasmania.

This mine is situate on the Cream Creek (a small tributary of the Arrow River) on the Western Slopes of the Blue Tier. The battery site is close to the Arrow river at 1580' A.S.L. The highest Open Cutting is at 1830 feet above sea level and 250 feet above the battery site.

Five faces have been opened and Tinstone crushed from them besides several tin bearing quartz veins on which a good deal of surface work has been done.

The course of the main Tin dyke is approximately N.E & S.W. The lowest face is in the S.W. part of the mine at 1430' A.S.L. a cutting has been put in 80 feet long, 20 feet wide at its widest part and to 15 feet deep.

The second Cutting is 3 chains further East at 1750' A.S.L. here a cutting has been put in 50 feet and then opened out in a circular shape 55 feet by 45 feet and 15 feet deep.

The third face is opened at 1800 feet A.S.L. and is 30 feet long, 20 feet wide and 10 feet deep.

The fourth face is at 1810 feet A.S.L. has an approach of 50 feet long, the Cutting is then 58 feet by 45 feet and 12 feet deep, the top layer of six feet thick has been left standing and the lower six feet has been gouged out for 20 or 30 feet under the Capping and the roof held up by props. In this face considerable quantities of Copper Pyrites is to be seen in the Tinstone, and in the broken dirt it shows as Sulphate of Copper, this ore would best be broken separately as some of it carries from one to two per cent of Copper.

Notes on the Cream Creek Tin Mine, Blue Tier. Tasmania.

The fifth or upper face is at 1830' A.S.L. and is where the bulk of the stone was taken for the latest crushings.
This face is 120 feet long, from 5 to 30 feet wide and up to 20 feet in depth.

The first 12 feet ~~in~~ deep is a capping of comparatively poor tinstone. The next 6 to 8 feet is much softer, and has been worked all around under the capping as far as it was safe to go in the primitive manner in which work was carried on, a big cavern was taken out joining this face with the Fourth face, the softer dirt being followed for two reasons. 1st it was easiest to mine and carried more tin than the harder stone, and 2nd it was easier crushed in the small battery of 10 heads of stampers.—

South East of the Fourth face some veins of quartz running S.E. and N.W. have been worked for a length of 150 feet right up to the Fourth face, and 10 feet higher up the hill a cutting 20 feet long and 15 feet wide has been made and a shaft sunk below this cutting for 20 or 30 feet (so I was informed) on one of these veins.

I tested several of these veins and most of them carried very good tin, I might add that the work done on these veins was all prior to the erection of the battery and the tin was obtained from them simply by ground sluicing the soft portions of them near the surface, and when the stone became harder (too hard to sluice) they were abandoned by the miners.

A feature of these tin dykes is that when intersected by the quartz veins they generally carry good tin, Near

Notes on the Cream Creek Tin Mine, Blue Tier, Tasmania. 79

the huts I noticed a Basalt dyke about 3 feet wide cropping up in the bed of Cream Creek, this dyke would intersect the tinstone near the South West open cutting.

The Cream Creek Mine was looked upon with much favor about 20 years ago, having been very favorably reported on by the H. W. Ferd. Kayser of Mt Bischoff. A 15 head battery of light Stampers, Jiggs, Buddles and Tables were erected by Mr Kayser driven by a Pelton Wheel with a pressure of 94 feet of water obtained from the Wynyard and Frome Rivers.

4375 tons of Stone were crushed for a yield of 21 tons of tin ore, worth on the Mine (at £50 a ton) £1050, the Stone yielded 0·48% black tin and had a value of 4/9½ per ton.

With such a small battery and the costly way of mining the Stone this could not have been payable in those days, but if the Mass of the Stone would yield that Sand return it would be highly payable at present prices.

Nothing has been done to show the length and width of the Cream Creek dyke of tinstone, but I think it can safely be said to be exposed for a length of half a mile, and at the Southern end for over 4 chains in width, the width at the Northern end higher up the hill is unknown as the granite overlies it in places, but as previously stated, at the No 5 Face it is opened for a width of 120 feet, and the limits not yet determined.

The ridge between the Watershed of the Frome and the

Notes on the Cream Creek Tin Mine, Blue Tier, Tasmania 30

Wynyford Rivers rises 50 feet above the Upper Face on the Cream Creek Mine on the line of the tin dyke formation, and I believe that Spinks's Claim is on the Continuation of the same belt.

If Dickenson's, Nicholson & Bryce, Cream Creek, and Spinks' Claim are all on the same run of Tinstone (which I think they are) this Formation is proved for over a mile long at present with good tin obtained at the points named.

A few years ago a Melbourne Company of which Mr Herbert J. Daly was stated to be the Manager of, bought the Cream Creek Leases for some thousands of pounds and erected a 10 head battery and dressing appliances and put through a quantity of the tinstone, but I cannot find out the actual results of his work, I am however quite certain that it could never pay on the system in which it was worked as all the stuff was handled 2 or 3 times before reaching the battery, it being tipped into hoppers at each face and then trucked to the next face and so on, and after being trucked to a hopper at the foot of the faces it was again filled into trucks and sent down a short self acter to the battery hopper, into which it fell over a timber Chute for 60 feet vertical depth.

Most Costly and elaborate trestling work was erected, some of it over 30 feet high, over which the stone was trucked by hand, instead of which a self acting ground tram could have been made and worked, very cheaply and

Notes on the Cream Creek Tin Mine, Blue Tier. Tasmania.

the ore delivered from the faces into the battery from the same trucks.

The previous Company ran the trucks down by brakes and pulled them back to the hopper with a horse, they too ran the trucks from the top face and tipped it into a hopper at the next face, these two lots being again trucked to a third face and so on until the horse tram was reached. —— So far as I could see there is only one objectionable substance at the Cream Creek Mine and that is the Copper Pyrites in the 4th face but I think the cost of roasting the ore would be more than compensated for by the value of the Copper obtained, it is probable that the heaviest Copper bearing ore could be picked out for some time to come and not crushed with the cleaner Tin stone.

The Battery site, appears to be a good one and is at the road along which Machinery can be carted from Moorina 4 miles distant.

The Leases are all forfeited except the Machinery site, 5 acres, 551. Before attempting to erect any more crushing Machinery I would strongly recommend that the Cream Creek Tin stone be thoroughly tested by boring with a Diamond drill, when I think there is every indication of a payable Tin Mine being discovered, there is a strong tin bearing formation there but it needs proving in depth and what tonnage and values it contains Sample bag N° 95 is an average of the 5 faces as now standing.

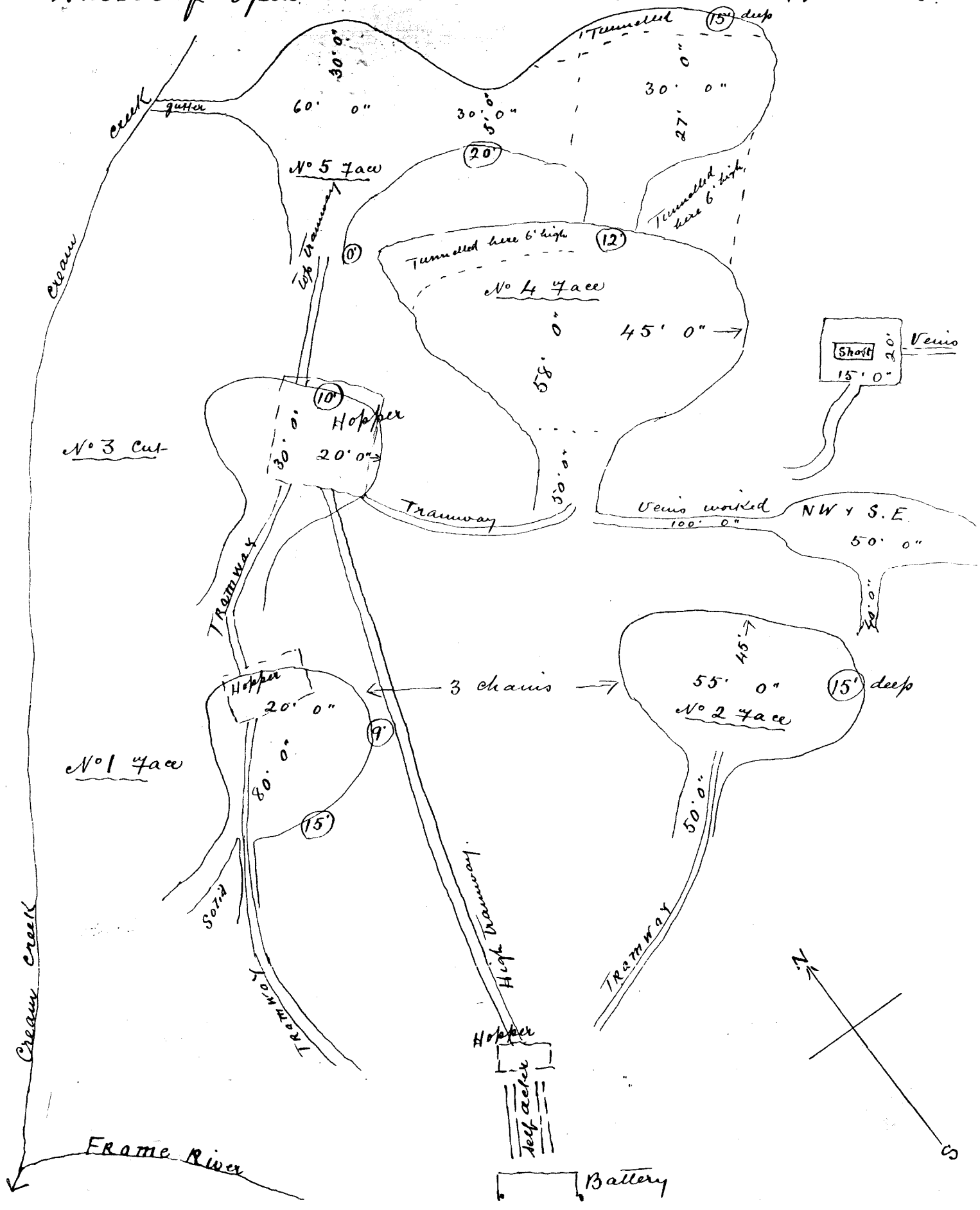
Luke Williams

Lottah, Tasmania

Dec 19th 1904

(5A)

Sketch of Open Cuts at Cream Creek Tin Mine, Tasmania.



Luke Williams, F.G.S. (London)

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Moonah, Hobart, Tasmania

83

Dec 26th 1904.

Messrs Knose Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

Since writing you on the 20th inst I have received your letter of the 14th inst with a list of analyses of the West Coast Samples I sent you all of which I have read with interest and thank you for the same, I shall be glad to receive the other assays as promised when available.

Sections forfeited. No sections on the Blue Tier were gazetted as forfeited this month, and only one small block of 5 acres No 352 M on the Frome River in the names of Gavan Bryce & Thomas Bryce which I inspected and which you will see on the Mineral Chart I sent you has been forfeited, I think it hardly necessary at present to recommend you to take up this small block.

Inspections of Mines. As it was getting so near Christmas and the probability of the guides to

the Ruby Flat and Scamander Mines leaving for their holidays. I thought it best to examine those Mines before completing my Reports on the Blue Tier Tin Mines,

It was fortunate that I did so, I left Lottah at 8 p.m. last Thursday with samples from the principal mines which I had examined, and the following afternoon the hotel which I had been staying at was burned to the ground in a few minutes, and had I not have left, the whole of my samples would have been destroyed, I brought them to Georges Bay with me and they will go forward by Holyman & Sons first Steamer to Melbourne.

I have completed the inspections of all the Mines you instructed me to examine at the Blue Tier and the Scamander, and am now working hard at my Reports and will send them forward as early as possible.

Herewith enclosed please find list of (7) seven samples and five specimens of Tin Stone Nos 90 to 96 A from the Blue Tier and Ruby Flat Mines. The samples are in bags and the specimens wrapped in marked papers.

Yours Faithfully

Luke Williams

Tin Samples in box. Via Georges Bay (St Helens) Tasmania.

No 90. Average Sample of the North and South Open Cuts where the bulk of the Stone was crushed from at Haley's Lease, Blue Tier.

No 91. Average Sample of Morling's Shaft on Haley's Lease from Surface to bottom 20 feet deep and across the back of the North drive 10 feet deep.

No 92. Average of the "Full Moon" Tin Mine big Outcrop 200 feet long (E & W.) and 300 feet wide (North & South the full width of the formation is 363 feet, but the 63 feet nexct to the North wall has not been broken into and therefore could not be fairly sampled.

No 92 A. } Very hard Tin Stone (the Full Moon Tin Mine) from Mc Murray's Shaft
No 92 B. } sunk 40 feet deep near the Centre of the Lode.
The Tin is to be seen thoroughly distributed through these two Stones, clearly proving that the Tin may be expected to live in depth in the hardest Stone.

No 93. Average of Beale's Shaft 22 feet deep. 2 sides and 2 ends Sampled from top to bottom

No 94. Average of Lode 12 feet wide in Tunnel of the Wellington Tin Mine, 303 feet from Entrance.

No 95. Average of (5) Five faces of Tin Stone at Cream Creek Tin Mine where Stone has been crushed from.

No 96. From J. Bakhap's 20 acre block at Ruby Flat adjoining the Nugget Tin Mine, above Branxholm

No 96 A. "Specimen" of Tin Stone from Lode Outcrop 40 feet wide on top of Nugget Hill (Pinnacle) at head of Ruby Flat, Branxholm, and 440 feet higher than No 96.

No A a "Specimen" of Surface Tin Stone and
B b Rich Tin Specimen from Surface rock under soil at W. Spinks Show near Cream Creek.

Luke Williams
Moonah. Tasmania.
Decr 26th. 1904

Luke Williams, F.G.S. (London)

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Moonah, Hobart. Tas.

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Decr 28th 1904

Messrs Kruse Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

Since writing you on the 26th inst I have been busily engaged getting out my Report on the Blue Tier Mines and Water supply and have pleasure in enclosing them herewith.

Mr Rabbeth's Reports I will send you by next Mail. I shall be glad to deal more fully with any items you may desire further information upon.

Ruby Flat and Scamander Reports will be prepared immediately and sent you.

Your letter of the 23rd inst to hand, Contents noted for which I thank you.

Primrose Ore. I will write Mr Hodge and advise me that I shall not require the zinc ore at present.

Yours faithfully
Luke Williams

Summary of an examination of the Blue Tier Tin Mines. East Coast. Tasmania.

After nearly eight weeks very careful investigation of the whole of the Tin Mines which have been worked from time to time during the past 25 years on and around the Blue Tier, I have formed a very favorable opinion of the future possibilities of this Tin field.

The Tin bearing Rock is generally much finer-grained than the ordinary granite and may be called by various names, such as Quartz-porphyry, Greisen, Aplite and others at the different Mines, but for convenience I will use the word "Tinstone" to designate the Rock carrying the tin oxide (Cassiterite).

The Tin bearing Rock is known locally by the terms of Lodes, Formations, Dykes and Stockworks, but I think it will simplify my Report to use the word "Tinstone" in a general way to mean the whole of the rock, carrying Cassiterite or Tin oxide.

The Tinstone has been found over an area of 6 miles long from the Anchor and Liberator Mines on the South, to Connelly's Workings in the North and for about 3 miles in width from the "Full Moon Mine" on the East, to the Cream Creek Mine on the West. This area practically embraces the Blue Tier, though it is known that Tin bearing

"Formations extend South along the ridges in a continuous line to the Nugget Pinnacle East of the town of Ringarooma.

"The Blue Tier is the highest part of the Central Ridge or main Channel from which the Arba, Briseis, Brother's Home, Pioneer, Garibaldi and other leading East Coast Mines have been supplied with Tin.

Large quantities of Alluvial Tin have been obtained from the Blue Tier area, and many thousands of tons of Tinstone have been crushed in batteries, Roller Mills &c as referred to in my notes on the individual Mines.

It has been frequently stated that the Alluvial drifts of the well known East Coast Mines are an enrichment of the original tin deposits caused by the erosion of the tinstone and a subsequent concentration of the tin Contents in the Alluvial drifts such as the Briseis, Pioneer and others.

After a careful investigation of the matter I find that the "Tinstone" (in situ) carries much more Tin per Cubic yard, than the Alluvial drifts referred to.

"The average value of Tin oxide in the drifts at the Briseis Mine is under 5 lbs per cubic yard,

and large quantities of barren rock (Overburden) has to be removed to obtain the drift.
The last official publication of the amounts of Overburden and drift in the Briseis mine as recently published in the Melbourne "Argus", gave Overburden 981.700 Cubic yards to be removed, and drifts available 2.352.800 cubic yards, making a total of 3.334.500 Cubic yards to be removed, which contain an average value of 3.52 lbs of tin oxide per Cubic yard, i.e. allowing the Briseis Co's latest estimate of 5 lbs of tin oxide per Cubic yard in the drifts.
The Pioneer Tin Mg Co's actual output has been for the past 3 years 1.016.300 Cubic yards of drift, which yielded Tons 1064. C. 6. q. 1. lbs 20 of black tin, equal to 2.345 lbs of black tin per Cubic yard, the average worth per Cubic yard being 1/8 and the costs 6.598 pence ~~pence~~.

During the year ending 30th June 1904 the Co treated 351.100 Cubic yards of drift for 371½ tons of black tin, average yield 2.36 lbs per Cubic yard. Cost 7.171 pence per Cubic yard. and these costs will still further increase as firewood becomes more expensive, and more explosives have to be used for breaking down the Cement.

Compared with the Briseis and Pioneer figures.
The Anchor Tin Mg Co at Lottah have treated during the past 4 years 326.757 tons of Stone for a yield of 754-4-3-14 (T. C. a. lbs) of tin oxide, equal to 5.170 lbs per ton of Stone, or taking 12 Cubic feet (the weight of granite) in the Solid at one ton, the average yield from the Anchor Stone is 11.6325 lbs of tin oxide per Cubic yard. That is over 3¼ times more than the Briseis drifts are producing, and nearly five (5) times as much as the Pioneer Mine.

For the past year the working Costs of the Pioneer Mine had increased 0.573 pence per Cubic yard, while the Anchor Mine Costs had decreased to 2/6.56 per ton of stone treated, and for October 1904 the working Costs were further reduced to 2/0.77 per ton for 5863 tons of Stone treated.

I am well aware that the Costs of Mining and crushing are more costly at the Blue Tier than Sluicing Tin drifts at the Pioneer Mine, but as the Contents at the Anchor (which is the lowest grade Mine at the Blue Tier) are nearly 5 times that of the Pioneer (which is the most successful Alluvial

Tui Mine in Tasmania) I think the comparison is not out of place, as the Pioneer Co are aware that the further they go the poorer the drifts will become in future, while the Anchor Co may strike richer ore at any time in depth, or as they advance in to the hill.

The quantities of low grade "Tinstone" available on the Blue Tier seems to be practically unlimited as the following will show.

The Anchor Co are working their Mine at the battery level breaking Tinstone at 810 feet above sea level, The Crystal Hill Mine is at 1650' A.S.L. The Liberator 1800', The Australian at 1480' and 2230', the outcrop on the line of the Tinstone above the Australian Mine and known as the Puzzle hill is 2640 feet above sea level, the Anchor face being 1830 feet below the Puzzle hill and about 1½ miles away.

The length proved to this depth may be taken as 3 miles. viz from the Anchor and Liberator Mines to Beale's Mine near Mount Macumichael.

As to the widths of these Masses of Tinstone it is at present impossible to say.

I am not certain whether the Tinstone covers a

larger area beneath the surface. than the Outcrops would indicate, or whether each group of Mines is on a separate Dyke or Stockwork.

No serious attempt has yet been made to prove ~~to prove~~ the Tinstone at a depth as the "Full Moon shaft, which is the deepest on the field is only 120 feet deep, it was sunk about 20 years ago on some small rich veins, no attempt was made in the early days to deal with the large masses of low grade ore.

The Lottah Tunnels have both produced rich tinstone from the lodes, the lower tunnel in the face is now 240 feet below the surface, if it were continued along the "lode" under the Saddle of the Tier it would be 735 feet below surface and about 600 feet deep when the main "Full Moon" Outcrop was reached, these are the deepest workings on the field.

Suggestions. For the most economical working of these Mines situate on and around the Blue Tier, I would group them into 3 Separate districts. Those on the Southern and Eastern Slopes of the Tier including the Anchor, Crystal Hill, Liberator, Cambria,

Australian, Woolley's, East Coast Bischoff, and the Lottah, all the ore from these mines could be treated at the Anchor Battery site.
The Central group on top of the Tier would include the Ethel, Ida Crowther, Haley's Lease, Haley's Extended, Full Moon, St. George, Hope, Beale's, Perennial, Giant, Wellington, and perhaps the "Kent."
The Battery site for this group would probably be near the head of Cotton's Creek, north of Beale's shaft so as to run the Battery Tailings clear of the dams in which water would be stored for power purposes.
The Western group would comprise Dickenson's, Nicholson & Bryce's, Cream Creek, Spinks and perhaps Connelly's, and if found more convenient the Kent stone could be sent down to the Western group plant. the battery for this group could be either at the old Cream Creek battery site on the Arrow River or on the Wynyard River where a suitable site could easily be obtained.
The foregoing comprises a very big and complete scheme, but to secure the whole of the best shows would not be a difficult or costly matter, and by taking in all the chief mines under one

control it would prevent other people from afterwards coming in with any counter scheme. I would not suggest taking up the whole country side, but simply the known proved Tin shows, and leave the other land for Prospectors to test and if they discovered anything of value to the big Co. it could always be acquired by purchase and the Stone treated at one of the batteries.

The Chief Mines could be worked for ten years or more to come by Open Cuts, and the drainage of the Mines on the Tier can be carried out either from the Lottah Tunnels or from the Australian Co.s Battery Site, the latter site being approximately one thousand (1000) feet below the Haley's Lease and Full Moon Mines. —

"Review of past operations"

Reviewing the past history of the Blue Tier Mines everyone must admit that the Companies were in almost every case badly advised in their operation

When the Full Moon Co. was putting out 18 buckets (each one cwt.) of black tin per day with five men all sorts of wild schemes were invented and the average Tinstone was estimated to yield high percentages of Tin, and batteries with 5. 10 & 15 heads of Stampers were erected to treat the Stone,

The quantity thus dealt with was altogether too small to leave any margin of profit (more especially at the low prices then ruling for tin, it being at times less than one half of present prices on the field,) and the Capital of the Companies was too small to allow of development work being carried out.

The 845 tons of tin raised up to the end of 1885 from the Full Moon Mine, valued at £36.000 and which returned £20.000 in dividends, would at present prices be worth £73.500 and the dividends would equal £57.500.

The closing of the V. D. L. Bank at the time when the New Moon Co was putting up the 30 head battery was the actual cause of the Mine closing down.

The Haley's Lease Mine, with a 15 head battery crushed 5037 tons of stone, worth 6/6.28 per ton and with the costly system of mining, trucking and crushing in vogue at that time the returns came within 3¾ a ton of the Cost.

The Lottah Co did nothing beyond driving the tunnels referred to and no attempt was made to erect crushing or dressing machinery.

The small batteries, 10 heads and 15 heads (at different times) and the frequent handling of the Stone at the Cream Creek Mine must have made it impossible for any profit to have been made.

The 30 heads of stampers at the Australian Mine are driven by Steam, the Rock breakers are driven by a separate engine with separate drivers, this Mine cannot possibly more than pay expenses under the existing Conditions, the face of thistone situate immediately above the battery at 600 feet higher elevation, has been abandoned and the Stuff hauled from the "Dow" face by a Steam Winch over a tram 1829 feet long, with a rise of 150 feet, it is then fed by hand into Rockbreakers driven by a separate engine, and again trucked by hand to the battery which consists of 30 heads of 600 lbs stampers. The dressing Machinery at this Mine is Cumbersome and inefficient, they having Jiggs and three decked revolving buddles which are not suitable for saving fine tin. — The Co are about to make a fresh start again but I fear the results will not be satisfactory with the existing plant and system of working. — The Liberator battery of 20 heads was driven by Water power, but not having any Reservoir the supply was intermittent and unsatisfactory, at times only 4 heads were crushing, the Manager informed me that if he had a constant supply of water he could have paid all expenses and opened the Mine for a much larger output.

The Anchor Mine is the only one that has really faced the question seriously and their efforts have been very spasmodic, with no properly considered programme of operations. When the 100 heads of Stampers were

erected no provision had been made for a permanent water supply, so that after the 100 head were up, the average Stampers working for one year were only 37 heads, During the past fortnight only 50 heads have been working owing to the short supply of Water.

The longest Race is 2½ miles to the North George River, and I understand that it will take another 12 miles to tap the South George River, as they have no Reservoirs along these Races no water is stored for the purpose of regulating the supply.

"Recommendations"

"First, I think the Anchor Mine could be made to yield a satisfactory profit if a survey of all the available water power was made and water stored to regulate the supply, the Crushing and dressing plant should then be increased to the full capacity of the water supply.

When any exceptionally dry weather was experienced the lowest grade Stone should be Stacked at the benches (which now allow abundance of room) and the reduced number of Stampers could be employed on the better grade Stone, thus by keeping a regular number of experienced men employed on the Mine better results will be obtained than by changing hands so frequently, again each Man will break considerably more Stone in fine dry weather than

it is possible for them to do in wet stormy weather. By regulating the output in this manner the lesser number of stampers might be made to produce as much tin as the full number could under ordinary circumstances, then in the winter when the weather is rough and wet and against men doing full work breaking down the Rock in the faces the reserve heaps could be drawn on, the extra cost of handling (loading into trucks) would not be more than one penny per ton, as the filling & trucking now only costs 1·86 pence per ton.

The cheaper cost of mining large tonnages of Rock in the fine weather should equal the slightly increased cost of extra handling and besides the rock would weather considerably by being exposed in heaps and consequently be much more easily crushed.

Another matter worthy of serious attention is that of driving the battery & dressing Machinery by water for say 10 months in each year, and in the other two months of the hottest and driest of the Summer by Steam, the Capital Cost of a powerful Engine and the necessary boilers would not be a large item.

As before stated the Miners would do better work in fine weather in the open Cuts and the Stone would be more cheaply mined. The best

possible results would be obtained from the dry firewood, and the dry weather for steaming would probably show that the Stone crushed by Steam in the Summer would be very little more costly than that Mined and crushed in the Winter by ~~by~~ Water power.

Allowing for the Men engaged to keep the long lengths of Water Races in repair, I estimate that the difference between Crushing by Steam as against Water power in the Summer Months would not exceed (3) three pence per ton more by Steam power

Before doing any permanent work on any of the other Mines I would advise that the Control of as many as possible of the Mines which I have named and reported upon (excepting say Connelly's workings in the North and the Cambria in the South) should be secured.

I would then strongly recommend that a systematic testing by boring with a diamond drill should be made on the Chief Tinstone deposits of the Anchor (if included), Crystal Hill, Liberator, Australian, Ethel, Ida Crowther, Haley's Lease, Haley's Extended, Full Moon, Beales, Keit and Cream Creek Mines, to at least 100 feet deep, and

in any places where the Tin continued to a depth I would follow it as far as practicable with the drill. All Cores should be carefully examined and a record kept of its appearance and the rock passed through, the whole of the core should be assayed in 5 or 10 feet Sections, and the results kept on an assay plan showing the position of each bore hole and its assay value for both oxide and metallic Tin.

Though I firmly believe the future of the Blue Tier is one of great promise, I would urge that it be proved conclusively by bores to find the value of the Stone at a depth, as from my observations (very carefully made) I am forced to the Conclusion that the Tinstone in the larger "Formations" is in Floors or Stockworks, and barren Zones will be met with, and again at deeper levels rich Tinstone may be found to occur ~~again~~

After the boring has been done and the Cores assayed the value of a given tonnage can then easily be obtained and calculations made as to the future Scheme of working if the ore is payable

To work this field properly I should say that provision ought to be made to mine and treat at least (1000) one thousand tons of Tinstone

per day of 24 hours, and working six days a week.

The total Cost of Mining and treating the Stone should not exceed (2/6) two Shillings & sixpence per ton of Tinstone taken from the Open faces for some years to come.

With Tin at £132 per ton, 72% Tin oxide would be worth 10d per lb, equal to 3 lbs of oxide per ton to pay all working Costs.

Tin is generally figured at £100 per ton but the prices have long exceeded that and many people think it will yet see higher values.

Having dealt with the Ore bodies and their past history, and given my recommendations for satisfactorily testing them, I will now give my views as to suitable battery sites, and Water power possibilities.

"Battery Sites"

There are four (4) good battery sites for treating the Tinstone from the Blue Tier. viz. The Anchor, Australian, Junction of the Ransom & Groom Rivers with the George River, and near the head of Cotton's Creek and the Mussel Roe River at from 2160' to 2370' above Sea Level,

The Anchor Site commands all the Southern Mines and being 500 feet lower than the Australian, the Water can be picked up and used again to advantage by the Anchor plant.
The Australian Site could be used to treat the Crystal Hill, Liberator and Australian Co's Stone and eventually a tunnel driven on the course of the Stone, the main Haley's Lead dyke could be worked economically in this direction. —

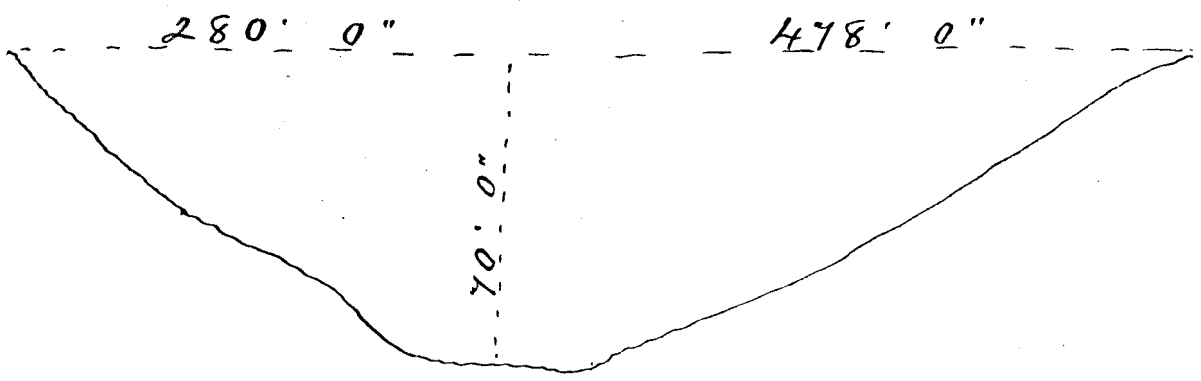
The Ransom and Groom River Site would serve any Mines worked through the Lottah Tunnel. And the water from the Anchor Mine could be again used at this Site, it would however require 8 or 10 Miles of Tramway over which to carry the ore, this would be expensive on such low grade Ore.

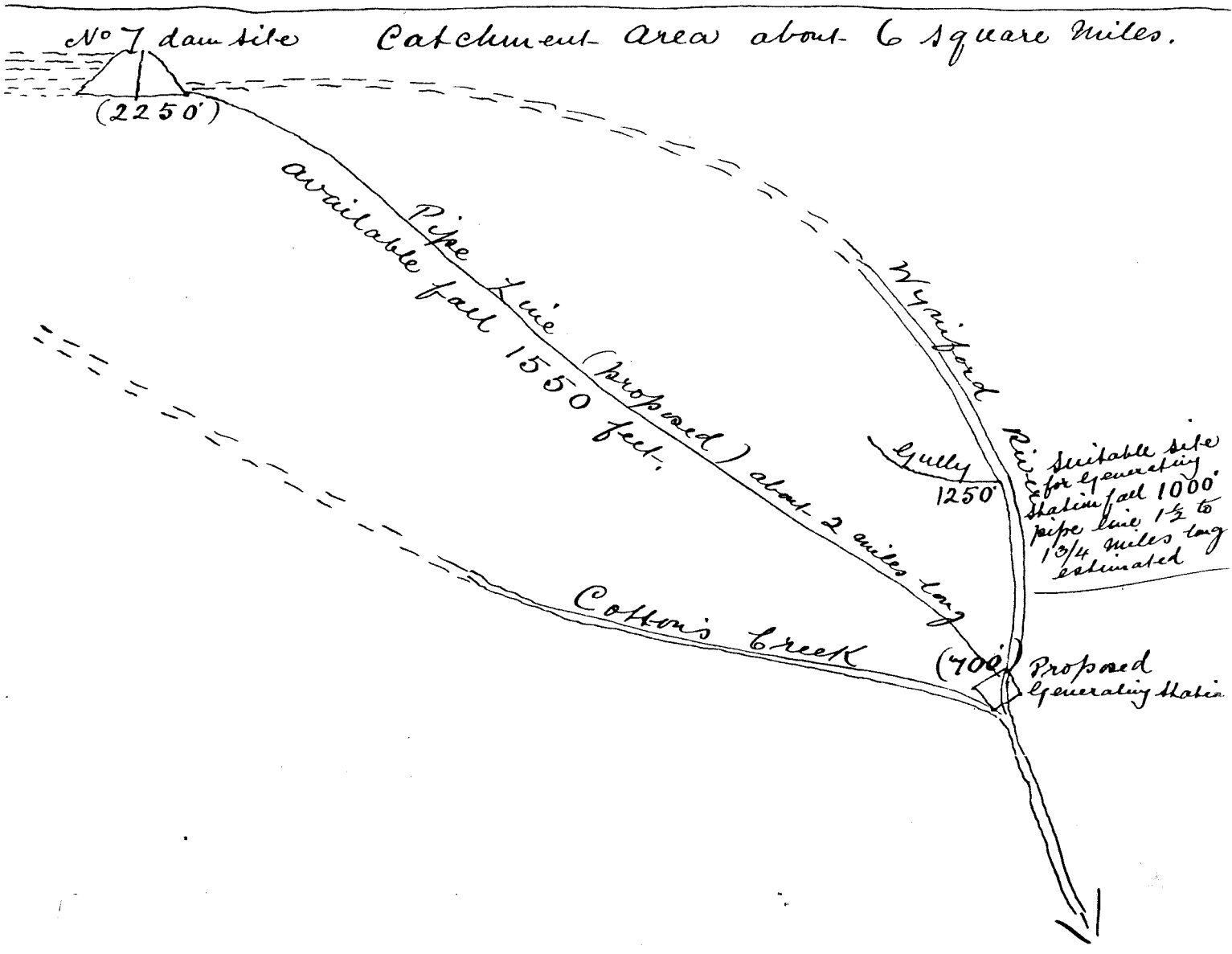
The Site I favor for the Central group of Mines is that near the head of Cotton's Creek and the Mussel Roe River, but before doing any thing in the way of selecting the site levels would have to be taken, it is however away from the Watershed of the dam sites and all tailings from the battery could be run clear from the proposed Reservoirs.
The Cream Creek Site would be for the Mines lower down on the Western Slopes and would be selected to suit the developments of those Mines.

Water Storage and Water power. On the high lands of the Blue Tier the water mostly drains in a North westerly direction into the Wynyford River. On the upper parts of this River there are at least a dozen sites for Storage Reservoirs, the largest of them the Wheal Tasman flat is estimated to contain 134.000.000 Cubic feet of water, equal to 836 Million gallons, with a depth of 30 feet at the embankment. A little over a mile lower down the Stream is a site known as the Compensation Reservoir site, this is estimated to contain 58 Million Cubic feet of water, equal to 361 million gallons, with a depth of 40 feet at the embankment. Below this site, nearly a mile by the River is a splendid site for a dam, it is known locally as the No 4 flat and would give a large storage Capacity I have marked the site in violet on Mr Rabbek's plan and enclose a Sketch of the proposed bank herewith, from it you will see that an embankment 11½ chains long would give 70 feet of depth at the bank, and the site of this bank is only about 10 feet below Mr Rabbek's Compensation bank, the one embankment would suffice for the two dams by making the lower one an extra 10 feet higher. Mr Rabbek was

(17 A)

Sketch of N° 7 Flat Reservoir Site, Blue Tier, Tasmania, Wynyford River, looking North.





engaged by the Tasmanian Government in 1901 and 1902 to thoroughly investigate the question of Water power for the Blue Tier Mines, but I learned from his local guide that he entirely overlooked the No 4 flat site.

Mr Rabbek reckoned that 1 3/4 miles Catchment area to the Wheal Tasman dam would have given 562 HP from 1st July 1901 to 31st August 1902 and the water would have risen 5 inches in the Reservoir. By building dams at all the suitable sites and storing all the water that falls above the No 4 flat I estimate that there would be a Catchment area of 6 square miles, which calculating at the same fall as Mr Rabbek used would give 1926 HP. and as the Cottons Creek site will give 1550 feet of fall as against 450 to 1050 on the Southern Slopes the power which could be generated and used electrically is enormous. and whereas Mr Rabbeks idea was to build the Compensation Reservoir to allow the water to run down the Wynyard River to compensate the Pioneer Garibaldi and other Mines for the loss of the Wheal Tasman flat reservoir water he intended to divert, under my Scheme the whole of this water could be used to generate Electricity

and then be turned into the River to supply the mines lower down.

Between the N° 7 flat proposed Reservoir and the proposed Generating Station at 700' A.S.L. only two Water Rights are held, the upper one (the Kent) is about a mile below the proposed dam site and at 65 feet lower level, the other is the old Cream Creek Race about 40 feet lower than the Kent. At the time of my visit on the 16th December 1904 no water was being taken in the Kent Race as it was prohibited in dry weather to take the water from the Wynyford River to turn it into the Frome River.

About 5 Sluice heads of Water was running in the old Cream Creek Race (now I believe held by the Pioneer Tin Mining Co.)
It would not be difficult to arrange for the supply of this Race I think, and as the Storage of Water on the Blue Tier in Winter and letting it down in the Summer would be a distinct advantage to the Pioneer, Garibaldi and other Mines in that locality, no doubt they would welcome the Scheme for Storing water.

For the first mile below the N° 7 flat there is very little fall in the Wynyford River, and

there are two very good sites for dam banks, one at half a mile below which is only about 5 feet lower, and another about 3/4 of a mile below and 35 feet lower,

On the Creeks between the Reservoirs shown by Mr Rabbeck on his plan there are sites for other small Reservoirs if it is found that the Rainfall is sufficient to fill them.

By placing the Generating Station near the junction of the Wynyard River and Cotton's Creek the whole of the Reservoirs could be closed during heavy rain to allow them to fill, as there would be large volumes of water flowing in the Wynyard River and Cotton's Creek and this could be used at a lower pressure in the Winter time when the volume was great below the lowest Reservoir.

No better material than the decomposed granite of the Blue Tier could be obtained for making Reservoir banks, and this could be done at (9°) nine pence per yard for the excavation and carting to the bank. This material sets very hard and is absolutely water tight.

For £5000 each two large Reservoirs could be made at the Wheal Tasman flat and

at the N° 4 flat. It would be necessary to put an outlet pipe in the bottom of each bank to occasionally draw off the tailings which have been sluiced into the creeks and which in time might work down to the embankments.

In Constructing these Reservoirs there are no engineering difficulties, the bed rock being solid granite and the material close at hand for constructing them.

Mr Rabbeth's figures of £94.000 & £22.500 are altogether too extravagant — and need not be entertained, whatever sized bank is required it can be done at <u>three pence</u> per Cubic yard for the earth excavated to form the banks.

By putting the Generating Station at the site marked by me on the Wynyford River the Electric power can be generated and sent up to the Mines to do all the required work such as Winding, Tramways, Batteries and dressing Machinery.

Should the future works of the Blue Tier Mines ever reach a Scale of Magnitude greater than the water power could be made equal to in the Summer Months. Steam power could be used for 2 or 3 Months in the Summer time, as

there is an abundant supply of every kind of firewood all around the hills above the site for the generating station. In the dry weather the steaming qualities of the Myrtle & Gum wood are good. a stock of wood could always be kept on hand if necessary, the Capital Cost for an Engine and the necessary boilers would not be large, and the same Engine driver would be employed.

Before deciding on any action in reference to this Water and power Scheme it would be necessary to have the available Catchment area surveyed and the sites for Reservoirs inspected and their areas determined, the lengths of pipe line measured, and the actual fall ascertained, all my examinations were necessarily brief and cursory and the heights were taken by Aneroid.

Lottah is only 19 miles from the port of St Helens by a good road and Machinery and Tin is cheaply carried along this road.

Taken altogether I know of no better proposition than the Blue Tier Tin Mines and Water Supply offers at present.

Luke Williams

Moonah. Tasmania. Decr 28th 1904

Luke Williams. F.G.S. (London) 111

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First class certificated Mining Manager New Zealand Government

Moonah. Hobart, Tasmania.

Dec 30th 1904

Messrs Knox Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

Herewith I am enclosing extracts from Reports made on the Blue Tier Tin Mines & Water Supply by Messrs G. Thureau, A. Montgomery and W. H. Twelvetrees, Tas. Govt. Geologists, also Messrs Richard Provis and R. A. Hilles, all these gentlemen thought well of the Blue Tier.

I am also enclosing my Notes on the 20 acre Section held by Mr J. Bakhaps on Ruby flat Branscholus.

Under Separate Cover I am sending you Mr Rabbeth's Preliminary Report on the feasibility of conserving water for power purposes in the Blue Tier district dated 23rd Sept 1901. also his Report dated 17th Sept 1902 entitled "The "Blue Tier Gauge".

Yours faithfully
Luke Williams

P.S. Meander Report will follow by next Mail.
L. W.

Mr G. Thureau, Tasmanian Government Geologist, in his Report on The Blue Tier Mining District and its Tin Deposits, February 1886. stated. —

... The alluvial tin ore deposits which have been
" wrought in this district for over eight years past
" with great success, but which are now nearly deprived
" of their mineral treasures, have produced large
" returns of tin ore for export. It may be stated,
" that information has been obtained from reliable
" sources to the effect of this Blue Tier Mining District
" having yielded during the period mentioned over
" 3000 tons of tin ore, which, at a low computation of
" Fifty Pounds sterling per ton, has added £150.000
" to our exports, or over £21.000 per annum.
" "Lottah" and "Full Moon" ... "These deposits,
" as already mentioned, gave large yields, both from
" the recent and older formations, as they, in a
" very few years, gave to a limited number of miners,
" and, later on, to a Company, down to the 100 feet
" level, 875 tons of ore, at the estimated value of
" £36.000, of which sum £20.000. was distributed
" amongst the Shareholders as profits, who had
" commenced with a working Capital of but
" £6.500. In view of these facts it appears
" as most surprising that both the Lottah and the
" Full Moon Companies should remain for so
" very considerable a time at a Standstill, so
" far as their operations on the lode formations

" are concerned, when it is quite evident that, in both
" cases, a moderate expenditure, judiciously laid out,
" would, from all appearances, have sufficed to place
" them in the dividend list.
" In concluding this Report on the Blue Tier Mining
" District, and taking at the same time a compre-
" -hensive view of its many and quite undeveloped
" tin ore deposits, it will be consolatory to find that
" although the erewhile so easily obtainable alluvial
" deposits have been nearly exhausted at the Blue
" Tier proper, there remain others of the same class
" not yet touched, and also others of an extent,
" permanency, and value which, if at once subjected
" to systematic mining operations, would give to this
" district that settled mining population which all
" permanent Mineral and metalliferous deposits
" contrive to do, and thus settle the district for a
" long time to come.
" The only two drawbacks at the Blue Tier have been,
" and are now, — firstly, that it has suffered from
" the same intermittence in Mining operations as the
" rest of Tasmania, arising from spasmodic
" attempts by speculators to float worthless Mining
" ventures, and from excessive Market operations,
" superadded to mismanagement; secondly, the
" want of a regular and copious supply of water.

" but that difficulty is gradually disappearing with
" the progressive exhaustion of the alluvial tin deposits;
" and if the present owners of mines in this district
" would take full advantage of the very favorable
" conformation of this mountainous country traversed
" by deep valleys, and adopt a general system of
" driving deep adits in such localities as nature
" has provided in contiguity of lodes and dykes,
" there is, in my opinion, ample scope for the initiation
" of a to-be-maturely-considered scheme for unwatering
" those stanniferous formations to great depths at
" moderate expense, and then to work the same
" on a comprehensive system by means of several
" main adits.

" This would also reduce the present difficulty
" and the expenditure necessary for bringing down
" the cleansed ores from high altitudes, as the
" mouths of the adits would necessarily be
" situated at much lower level.

(Signed) G. Thureau F. G. S.

Mr A. Montgomery, on Water Conservation, in his Report dated 5th November 1889.

"Conservation of Water. — Owing to the great height at
"which the tinfields of the Blue Tier district lie, the
"supply of water is only sufficient for sluicing purposes
"during the wet months of the year; and on the higher
"ground there is always difficulty in getting a good
"supply at a height sufficient to give pressure
"for hydraulic working, which, in my opinion, is now
"the great desideratum for the poor alluvial dirt still
"plentiful. I am confident that an immense
"area, yet untouched on account of its poverty, as well
"as much ground that has been already sluiced, could
"be worked by the hydraulic method with profit.
" I do not think that the conservation of water in dams
" and reservoirs presents any very great difficulties;
" on the other hand, the configuration of the Northern
" slope of the range is very favourable for the storage
" of water. The Blue Tier is one of the wettest
" places in the Colony, the mean rainfall from the
" 1st January to 30th September for the last five years
" being 42·84 inches, an amount of fall only exceeded
" at Waratah and Corinna.
" The range itself gets a greater amount of rain than
" Gould's Country, where the observations are taken.
" Mr R. A. Milles, the Manager of the Full Moon

Mr A. Montgomery on Water Conservation. 5th Nov 1889.

"Mine. (Mr Millis is now 1904 Director of Water Works for
"the Hobart-Municipal Council L.W.). has observed the
"Rainfall this year, (1889) and finds that in the six months
"between 14th April and 14th October, 1889, 48·40 inches
"of rain fell on the tops of the range. This gives a very
"large quantity of water falling over the wide flat-
"lying top of the Mountain.
"Now there are a great many places where low embank-
"ments will impound a wonderfully large quantity of
"water. The Hall Moon Company have erected a small
"dam, which will give a large supply of water, and
"Mr Milles informed me that he could impound 10
"acres of water, or about 20.000.000 gallons, by
"raising this dam to a height of only 25 feet
"above the deepest point in the little Creek. This
"embankment would be 288½ feet long, and have
"an average depth of about 13 feet,— quite a light-
"work. The same gentleman has taken levels and
"measurements that show that on Wheal Tasman
"flat a reservoir could be made with an embankment
"about five Chains long and of about eight feet
"mean depth, that would contain something like
"200.000.000 gallons of water. These figures give
"some idea of the ease with which large quantities
"of water may be impounded. There are many

Mr A. Montgomery on Water Conservation, 5th Nov. 1889

" other places where smaller reservoirs could be made
" at a low cost, at different levels, almost to the
" top of the range. Lower down, along the Wynyard
" River and its tributaries, there are great of good
" reservoir sites. One very good one is on the Tyeant-
" Company's ground (now the Compensation Reservoirs site L.W.)
" Here there is a wide flat which has been worked for
" alluvial tin. The ground was so flat that there
" was great difficulty in keeping the workings free from
" water, and all the wash dirt had to be washed in
" boxes, as there was not sufficient fall for ground
" sluicing. At the lower end the valley narrows, and
" a dam about five chains long and not more than
" 25 feet deep in the middle would store the water in
" a basin probably 30 acres in extent.
" As the Wynyford in flood carries a large volume
" of water, there would be no difficulty in filling this
" dam.
" A system of water storage on the Blue Tier would
" benefit all the tin-sluicing Companies down the
" Wynyford River as well as the Blue Tier workers.
" In a short visit such as mine it is not possible
" to learn how much water could be stored, and
" exact data on which to base estimates of cost of
" storage and area of ground benefitted can only be

Mr A. Montgomery on Water Conservation, 5th Nov 1887

"obtained by a careful Contour Survey of the district.
"Such a Survey would be of great assistance to Mining
"Companies by showing exactly how far they would have
"to go to get water at any level, what fall they could
"get for tailings, and what distance they would have
"to drive in order to drain their mines to deep levels.
"This last is a matter of great importance for
"the future working of the field, as it would obviate
"the necessity for pumping machinery, with its
"constant heavy charges, if a deep Adit were to take
"away the water.
"An Adit a mile in length from the Southern
"side of the range would drain the Lottah, Gull
"Moon, Haley's Lease and part of the Blue Tier
"ground to a depth of about 800 feet below
"the Water-shed. I do not know of anything
"that would do more towards directing Mining
"operations into the most economical Channels
"than a proper Contour Survey.

Signed A. Montgomery M. A.
Inspector of Mines and Geological Surveyor

Opinions of well known mining men on the value of the Blue Tier Tin Mines. Tasmania.

Mr A. Montgomery. Tasmanian Govt. Geologist in his Report on the Blue Tier Mines, dated 19th January 1893 stated. In Conclusion.

"In concluding this report I have to express my "conviction that the stanniferous dykes at the Blue "Tier are of the very greatest importance to the Colony. "They are of low value in Tin, it is true, but of such "immense size that a very small margin of profit "can be made to mean an enormous sum in dividends, "and what is even more important, a steady and "permanent industry employing a large number "of men. To work them profitably will tax our "engineering skill to the utmost, but will, I believe, "be successfully done. At the risk of repeated "re-iteration, however, I must point out that this "opinion is founded on the supposition that the "tinstuff remains to some depth of the same value "as on surface, which is not yet a proved fact. "Even if it only lasts for 100 feet in depth, however, "there would still be an immense body of crushing stuff "What has now to be done is clear: we must prove by "boring and mining that the tin does or does not "go down, for everything depends on this. Then "raise Capital for working on a very large scale.

Mr Montgomery 19th January 1893. 120

"If the Tin does not last to a depth it will be a
"question whether the superficial rock will be
"sufficient in quantity to be worth treating in an
"extensive plant; but if it does go down, and
"averages anything over one half per cent. of
"black tin, then we may confidently look forward
" to the Blue Tier district becoming quite as
" famous as Mount Bischoff.
" I see no reason to fear that the tin
" will not last, and am therefore very
"sanguine as to the prospects of this field.

(Signed) A. Montgomery M. A.
Geological Surveyor.

Referring to the Puzzle Tin Mine (now Australian)
Mr Montgomery stated. 19th January 1893.

"A tunnel driven at the north boundary of Section
" 1515 M would be about 400 feet below the top of
" the range. Should it demonstrate the excistence
" of tin bearing rock for a distance corresponding
" to the surface distribution there would be work
" for a Century to mine and mill it at the
" rate of 1000 tons a week.
" This gives some idea of the magnitude of these
" stanniferous formations at the Blue Tier, and of
" the immense importance to the Colony of ascer-
" taining as soon as possible how to work them
" profitably.
" General Remarks. The great problem for solution at
" the Blue Tier is how to profitably treat the large masses
" of low-grade quartz-porphyry rock existing in the
" Anchor, West Anchor, Liberator, Puzzle, New Moon,
" Full Moon Extended, Beales, Perennial, Kent,
" Cream Creek and doubtless other mines. If these
" deposits continue to any depth of the same richness
" as on surface the wealth contained in them is enormous
" and if means can be found of successfully winning
" the tin from them, the Blue Tier will be one of the
" greatest tin-producing districts of the world. Two
" things are therefore urgently required to be proved about—
" them. First that they are permanent to some depth & 2nd
" that they can be mined & milled for less than the value of the contained tin.

Mr W. H. Twelvetrees' Report on "The Tin Mines of The Blue Tier" dated 4th Decr 1901 Concludes thus. —

"In drawing these observations to a close, I may "emphasise the fact that on the Blue Tier we have "a large area of tin bearing rock, sufficient to "keep several mines going for a good many years, "supposing only that the tinstone continues a "very little below already proved depths.

" If it descends indefinitely, there is enough "stone for generations.

" If the dyke theory of its occurrence be correct, "there is no reason why it should not persist "to a great depth; if the floor theory is the "right one, it will still descend to any required "depth, but is liable to interruptions from barren "horizons. The different Companies interested "may be recommended to prove their ground by boring "before launching out into great works.

" Considerable portions of this area may "be safely expected to yield ½% of tin ore; "experience at the Anchor end of the ground "has shown that the bulk there is worth about "⅓%. If, as is claimed by the Anchor "Company, such stone can be treated profitably,

Mr W. H. Twelvetrees. 4th Dec 1901 123

" there is no doubt that immense quantities await-
" extraction. It is well, however, to bear in mind
" that, with such low grade material, the margin,
" or difference, between profit and loss is extremely
" small, and no engineering or mining mistakes are
" admissable.
" The development of the mines appears to be
" governed by the water power available.
" There is a lamentable deficiency of this.
" Steam makes up for it imperfectly. The
" real solution of the difficulty lies in an efficient-
" scheme for the conservation of the natural supplies
" of water. With adequate water the district-
" would, without question, be a busy tin-producing
" centre. It is a productive district as it is,
" but its production is intermittent, being dependent-
" upon the rainfall.
" For myself I entertain high hopes of the future
" of the Tier. It is true the ground needs testing on
" a large scale by boring, but it has been broken
" into already at several points here and there, and a
" good deal of it has been proved by actual work.
" We have good ore ground at its base; there is also
" good ground at its summit, and there is every reason
" to believe that in the intervening space there are large
" quantities of similar stone. This mountain range, in
X " my opinion, forms a practically permanent asset of
" the State. (Signed) W. H. Twelvetrees. Government Geologist.

Mr Richard Provis. A. M. I. C. E. (and brother of Mr John Provis) examined the Lottah tinfields and Reported as follows. —

"The property is situated on the Blue Tier Range, "Tasmania, about 18 miles from George's Bay "(St Helens). Two lodes traverse the property "for nearly a mile and have been proved by "tunnels driven upon them for a long distance. "The lodes vary in width from 10 inches to 5 feet "and the tin occurs in them in rich shoots and X Patches. From the last 80 or 100 feet of "the middle tunnel of N° 1 Lode good tin ore "could be immediately raised.

"From the fact that the property is situated "on the slope of the Tier, the lodes can be worked "by tunnels and no winding or pumping machinery "will be required. Water power for Ore dressing "can be secured by properly utilizing the Ransom "and the head waters of the Laffer River.

"I am very favourably impressed with the property "and with its prospective value. The promising "appearance of the lodes, and the natural facilities "for working them, without expensive drainage machinery "and permanent and available water power for ore "dressing are facts seldom seen combined in one property

"The Lottah is well worthy the attention of those who "are seeking a genuine and promising tin Mine

Mr R. S. Milles. A. M. I. C. E. 125
Manager of the Full Moon Mine in 1888 and later
Reported as follows. —

" Before I left the mine a very fair average lot of
" stone was put through the Mill, with results
" varying from 3/4 of 1 per cent to 3 per cent of tin
" oxide. Before the Mine was closed, some 2,000
" tons of stone was put through, with an average
" result of 1½ per cent tin oxide.
" From my intimate knowledge of the property,
" there is a large body of stone ready to be milled,
" which will give us as good a result as the above
" did. The dyke shows on the surface tin stone
" some 250 feet by 300 feet.
" A shaft of 40 feet had been sunk in this
" dyke, and the stone was tested at the Mill,
" with the result of a little more than 3 per cent
" tin oxide. The Mine contains a large
" quantity of low grade stone and it is useless
" to work the same on a small scale.
" From my intimate knowledge of the district
" I firmly believe that there is quite sufficient
" stone in sight on this and other adjoining
" properties to keep a large battery going for
" years to come, and if the same is carefully
" laid out and worked on a large scale, the

R. S. Milles. A. M. I. C. E. Manager Full Moon Mine.

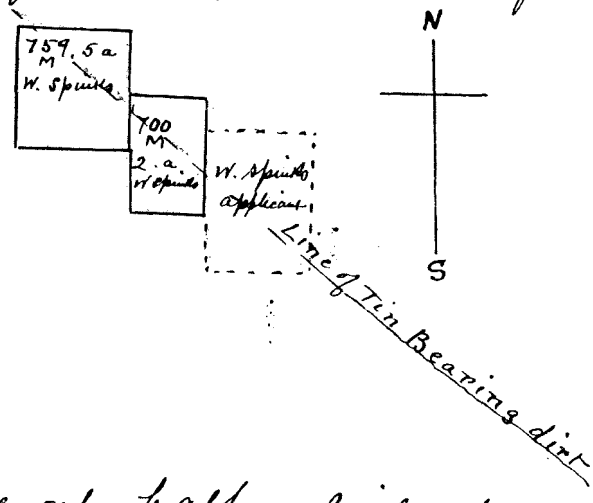
"result would be a good profit on a large outlay.
" In a later report dated the 31st May, 1894,
" Mr Milles states; From my own knowledge
" of the New Moon Property, there appears to
" be enough payable tin Stone in sight to keep
" a large battery going for years to come, and
" with a good margin of profit, and there is
" every indication also that these formations
" will live down.

N.B. The above R. S. Milles is at present (1904) Director of Water Works for the Hobart Municipal Council L. W.

Spinks' Claim, Blue Tier. Tasmania.

This claim is situate on the Northern Slope of the ridge between the Frome and the Wynyford Rivers.

It consists of 12 acres under Lease No 700 M 2 acres, and 759 M 5 acres charted in the name of W. Spinks on Mineral Chart — "Moorina" on the line of the Pioneer Water Race from the head of the Wynyford River. and another 5 acres is now about to be surveyed for Mr Spinks East of the other blocks thus.



These Sections are only half a mile from the Cream Creek workings and are I fully believe on the line of the same tin bearing formation. Spinks is sluicing off the surface and has worked some very good ground, 3 men winning 8 bags of tin per week. equal to £33.12.0 in value, this is not an alluvial drift, but the surface soil on the Lode formation, this soil is from 2 to 3 feet deep and carries good payable tin all through. At the time of my visit there was a scarcity of water on the claim, but I took 3 of my sample bags of the dirt and carried it to the creek and washed it and got 2½ ounces of coarse black tin.

I broke several stones which I found on the surface and saw splendid tin in 3 or 4 of them, showing that the lode or dyke

is crossing through these Sections.
When the Surface has been Sluiced off I think the tin stone will be found under it at the top of the Ridge, which is 1880 feet above sea level and 50 feet higher than the top open cut at the Cream Creek Mine.
This property would be valuable to work in conjunction with the Cream Creek after the Alluvial Miners have done with it.
Mr Spinks offers to sell it for £200 Cash for the 12 acres, he says from his prospecting he has proved from £800 to £1000 worth of Tin which he can obtain by Sluicing, but it needs 2 miles of a Race Cutting from the Wyniford River which will cost 10/- per Chain = £80 and Surveying £15 say £100 for the work. This would be a good investment for a Small Capitalist, but at present I do not think it worth your while taking it in hand unless the larger Scheme was being adopted and you wished to be raising tin immediately.
Eventually the Cream Creek tin stone could be worked from the Northern as well as the Southern Slopes of the hill if required, and in doing so they can be operated on from about the level of these Sections.
I consider Spink's Claim a good honest property which may later on be worth acquiring.
I am sending some Specimens of Tin Stone which I took out of the Solid formation where it was exposed by Sluicing.
Mr Spinks told me that his tin assays 75% metallic in bulk.

Luke Williams
Lottah Tasmania
Decr 19th 1904

Notes on the Kent Tin Mine, Blue Tier, Tasmania 129

This mine is on the Ridge which divides the watershed between the Frome and Wynyard Rivers, and about a mile West of the proposed Dam site at No 7 on the Wynyard River.
Some acres of ground have been sluiced and the tinstone thus laid bare.
The only work of importance that I could see was a long trench put across the formation for a length of 165 feet from 0 to 6 feet deep and from 2 to 5 feet wide.
The course of this trench is N.E and S.W. and the altitude 2160 A.S.L.
Sufficient work has not been done to prove the width or the course of the tinstone, but it would appear to be 2 or 3 chains wide, and running about 10° West of North.
I saw some very good tin showing in the Rock at a shallow hole 40 feet South of the end of the trench, but as the tin stone was in flat layers I did not think it advisable to take samples from here,
There is undoubtedly some good tinstone at the Kent but it requires one or more bores putting down into the formation to prove it properly, the work done so far is only in surface scabs on the top of a small rise and has therefore proved nothing.
The Kent dam site about 10 acres in extent is at 2130 feet A.S.L. and is a useful little site, at present held by C.E. Houston, All the Kent Mineral Sections are forfeited
The Kent property is well worth properly prospecting as it is well situated for cheap mining.

Luke Williams, Lottah. Tasmania.
Decr 19th 1904

Notes on Connelly's Tin Lodes, Blue Tier, Tasmania.

These lodes are situate at the Northern end of the Blue Tier on its Western Slopes, at 1800 feet above sea level, and 700 feet below Pomona Township (and not 700 feet above it as stated in Mr G. Thureau's geological Report of 1886).

It is about 6 miles N.W. of the Anchor Tin Mine and is the most Northerly tinstone worked on the Blue Tier so far as I can learn.

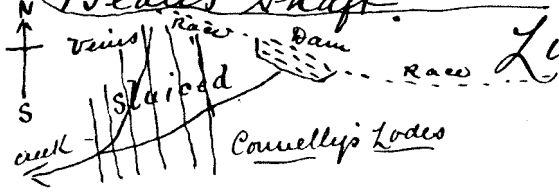
There is a lot of decomposed granite to be seen in two small creeks from which the bulk of the surface soil has been sluiced off.

A number of quartz veins are exposed in this soft granite mostly running North and South.

The largest quartz vein I saw was 2 feet wide and showed good coarse tin on all the faces and joints of the stone, but I could see no tin in the solid when breaking the stone. The course of this vein was North & South.

About 20 years ago 24 tons of Alluvial tin was won from the two small creeks immediately below the Veins. and more recently a greater area has been sluiced.

So far as I could see Connelly's show would be of no value to a Co at present, but the fact that the Tin formation is known to exist so far North on the Blue Tier is evidence of its permanency. there is ample room for further discoveries of Tin Stone South of Connelly's Lodes, between it and Beale's Shaft.



Luke Williams
Lottah Tasmania.
Dec 19th 1904

Notes on the East Coast Bischoff Tin Mine. Blue Tier. Tas.

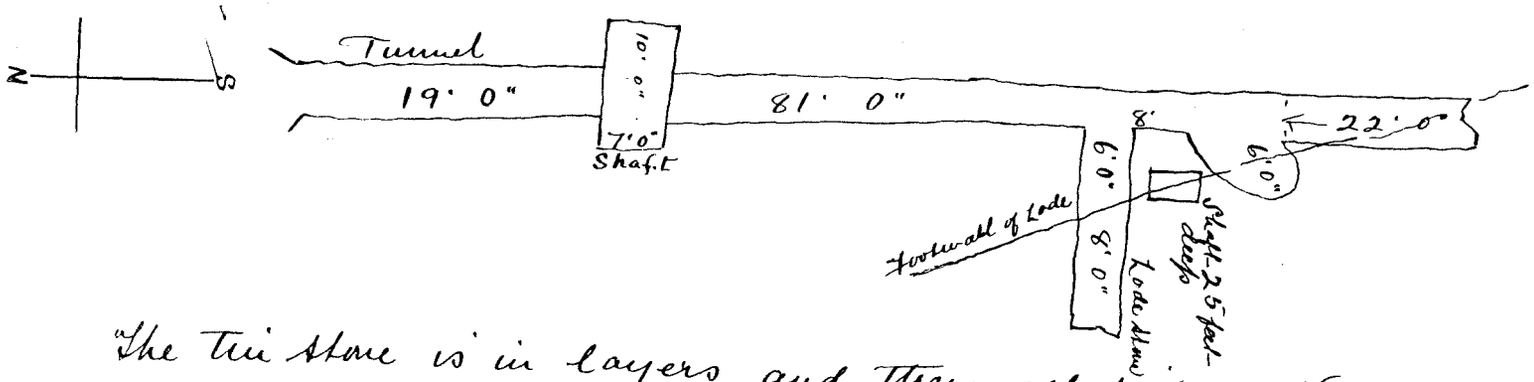
This mine is situate on the slopes of the hill North of the Anchor Mine Manager's house, about half a mile East of the Township of Lottah. It is on a branch of the Anchor tinstone formation.

A tunnel was driven at 1260 feet A.S.L. for 134 feet in length, and a short crosscut put in West 14 feet; the last 8 feet being in the Lode, some of the Lode stone carries very fair tin, near the Footwall side the best tin is to be seen in a whitish clayey formation, and the rubble from the lode gave very fair prospects by vanning on a shovel.

Course of Lode in Crosscut 20° West of North.

Underlay West, in parts very flat.

The following is a sketch of the tunnel and workings



The tin stone is in layers and they all pitch North.

Considerable excitement was caused about 14 years ago by the wild statements made concerning the richness of this mine, it has a tin lode running through the dyke formation. It would thus be well worth the Anchor Co doing some prospecting on it as it is only about half a mile from their battery and 450 feet above it.

Luke Williams
Lottah, Tasmania
Decr 19th 1904

Notes on Bakhap's 20 acre Section North and adjoining the Appalachian Tin Mine, Ruby Flat near Branscholm, Tasmania.

Situate near the head of Ruby Flat about 3 miles above Branscholm.

The Tinstone is stripped for 2 chains long and 40 feet wide the lowest point of the stripping being at 1380 feet above sea level.

The course of stripping is N. E. and South West and the beds of tinstone pitch North.

Enough work has not yet been done to determine the course of the Tinstone but it would appear to run N. W. and S. E.

The true width of the dyke has not been proved.

The Tinstone is mostly coarse quartz crystals and Mica, the tin is mostly coarse and is well mixed through the stone.

In some parts the patches of tin oxide are from an inch to two inches across.

There is also a good proportion of fine tin through the stone.

Sample bag No 96 is an average of the tin stone stripped at this Mine.

The well known tin Mine the "Appalachian" (formerly the Nugget-Tin Mine) is South and adjoining

and is a very interesting mine as the famous hill known as the Nugget Hill Pinnacle which can be seen from Ringarooma, is the outcrops of the lodes or dyke, this point is 1800 feet above sea level and 420 feet above where the tinstone is stripped in Bakhaps Section.

The tinstone is quartz and Mica, and shows for a chain wide, course 10° West of North. Some of the Stone near the outcrops carries rich tin, blocks of it would yield 10% black tin. but the average would probably be ½ per cent. Specimen N° 96A is from the outcrops on this Pinnacle.

This old Nugget mine has always had a good reputation, and was some years ago sold to an English Co, but they did nothing more than to test the mine with a 10 head battery.

It is now I believe held by Fred. Krushka of Ringarooma, I am informed that Mr Krushka had a crushing of 60 truck loads of tinstone each holding 15 cwts, for a yield of one ton of tin oxide, equal to 2.2% of tin oxide.

A great area has been worked for tin by Sluicing the surface South of the outcrops, and the tin in the Ruby flat and the Arba

Mines has evidently come down from this tin stone formation.

If this mass of tinstone had been situated on the Blue Tier I should place a high value on it, but as it would be a separate proposition, and require to be worked by Steam for all power purposes, it would require very careful boring and Sampling before any attempt was made to equip it with crushing Machinery. Mr Bakhaps offered me his 20 acre block to take it on practically any own terms, and after you have assayed the Sample it will be for you to say if it is worth taking in hand.

It and the Appalachian would make a good property and there is evidently a large body of tinstone, but whether it is payable or not has yet to be proved. It is a property that is worth keeping in view even if it is not taken in hand at present.

There is an abundance of firewood and Mining timber all around the Mine.

Luke Williams

Moonah

Dec 30th 1904

Luke Williams. F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
CERTIFIED ASSAYER; TASMANIAN GOVERNMENT, LABORATORIES.
MEMBER OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE NORTH OF ENGLAND INSTITUTE OF MINING & MECHANICAL ENGINEERS.
MEMBER OF THE AUSTRALASIAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.

First class certificated Mining Manager New Zealand Government.

Moonah, Hobart, Tasmania.

December 31st 1904.

Messrs Knox Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

Herewith enclosed please find my "Notes on the Eastern Proprietary Mine" & Sketch of a section of the Stopes in that Mine.
Also my Notes on "The Scamander Silver Mine and the Beulah Silver Mine, Scamander."

Under Separate Cover I am posting you by this Mail the Government Mineral Chart of the Scamander Field Showing the Mines I have visited & inspected. For convenience sake I have put the plan of my Survey of the Eastern Proprietary Mine on the Mineral Chart, in red. Scale 40 feet to one inch. This concludes my examination and Reports on the Blue Tier and Scamander Mine as per your instructions. I trust that they will be found Satisfactory. &c for above will be sent by an early Mail. I shall be pleased to attend to any other business you may require.

Yours faithfully
Luke Williams

Notes on The Eastern Proprietary Copper Mine, Scamander River. Tasmania.

The Eastern Proprietary Copper and Silver Mining Co. N.L. holds 160 acres of Mineral land in Sections 56 93 M and 57 93 M each containing 80 acres, both Sections are held as Copper Reward blocks, and are the only Sections held in the vicinity at present.

No work is at present being done on the Mine.

The course of the lode is approximately N. W & S. E

The underlie of the lode is to the West.

The Hill on which the lode outcrops and along its course rises to over 500 feet vertically above the main tunnel level.

A main tunnel has been driven 961 feet on the course of the lode,

The tunnel is 150 feet above sea level.

Crosscuts have been driven from the tunnel West 233 feet, and East 143 feet, allowing only 10 feet each for 3 Eastern crosscuts which have been filled up with Mullock, it is therefore possible that more crosscutting has been done to the East.

Notes on The Eastern Proprietary Mine, Scamander.

A Rise was put up 136 feet on the lode above the tunnel.

A total of over 200 feet in depth of Shafts and winzes have been sunk on the lode and Veins of Ore.

The total number of feet driven in the Main tunnel, Shafts and winzes sunk, and Rise put up esceeds 1746 feet, all on the lode.

The total quantity of ore raised and sold from the Mine is 262 tons 6 cwts. averageing 17.44% Copper and 11 ounces 5 dwts of Silver per ton.

There is now stacked at the Mine probably 100 tons of second Class ore worth approximately 10 to 15% Copper and 10 ounces of Silver per ton. according to the Reports issued by the Company.

I carefully measured the Main Tunnel and all the cross cuts not filled in, and have made a plan to a Scale of 40 feet to one inch on the Mineral Chart issued by the Mines Department for the Scamander River field. my work shown in Red.

The line of lode is crossed by a small creek. Where it crosses the lode is at 135 feet above Sea level.

Judging by the pools of water lying in the bed of this creek just above where the lode crosses it (and this in a particularly dry season) I should say that the drainage from the creek into the mine in wet weather would be very heavy, especially as the Country Rock is Sandstone, Slate and Shales.

15 feet South of the approach to the tunnel a shaft 6' 9" x 4' 0" has been sunk, the water standing within 16 feet of the tunnel level. This shaft I was told had been sunk to a depth of 80 feet on the lode, but I could not find out anything as to the class of ore obtained from it.

The approach to the tunnel is 20 feet long.

For the first 150 feet of the tunnel practically no ore is to be seen, but a fair amount of Copper Sulphate is showing in places on the walls & back of the tunnel, the Copper having leached down through the joints of the rock.

At 150 feet the first defined make of ore was met with in the floor of the tunnel.

This ore has been stoped out for a length of 10 feet along the bottom of the tunnel, and to a depth of 12 feet (to water level) at this depth it is reported that the ore had lengthened to 25 feet, and the

Notes on the Eastern Proprietary Mine, Scamander.

ore also continued under the Eastern crosscut, a block 12 feet long and 10 feet wide having been taken out from there.

From the tunnel, west a crosscut was put out 10 feet.

The tunnel is covered with a coating of Sulphate of Copper for the full distance of 261 feet up to the second or main shute of Copper ore.

At 209 feet from the entrance the second Crosscut has been driven East 17 feet and this has been used as a Magazine.

At 259 feet a 3rd East crosscut has been driven but as it was filled up, (having been stowed with Mullock) I could not examine or measure it. Crosscuts had also been put out East at 322 and 406 feet both of these are also stowed with Mullock.

At 406 feet a crosscut was driven South West 170 feet and a winze sunk 16 feet on a small seam of soft lode matter. I was unable to go below in this winze, as there was no windlass or ladders there, but I am informed that at 16 feet deep a seam of Iron Pyrites and black oxide of Copper was met-

with, but as water level was reached sinking was discontinued and the crosscut driven 33 feet beyond the winze, making 203 feet from the tunnel. The Course of this Crosscut is South West and at Right Angles to the Main Tunnel.

The 170 feet from the Main Tunnel to the winze sunk below this Crosscut is chiefly Sandstone with a little Slate and Shale, beyond the Vein on which the Winze is sunk the Country rock contains more Shale than Sandstone.

In the Main Tunnel at 15 feet N. W. of this Western Crosscut and 421 feet from the Tunnel entrance the Main ore Shute was cut. I measured along the floor of the tunnel and found it had been stoped for a length of 41 feet.

From official information I find that this Second Shute of ore was similar in character to the first except that it was larger, and continued 20 feet above the back of the Tunnel.

A Rise was put up 136 feet (the distance to surface being about 200 feet) The last 80 feet of the Rise carried very little Copper. The ore was

Notes on The Eastern Proprietary Mine, Scamander.

all stoped out below the tunnel to water level which was 12 feet deep below the tunnel, where the ore is said to be 70 feet long.

Mr George A. Waller (late assistant-Government-geologist) in his Report on the Eastern Propsty Mine 14th June 1901 states... In all, 296¾ tons of ore were obtained "from this stope, of which 100 tons mined in 1896 "yielded an average of 28 per cent. of Copper, and "1¼ ounces of Silver; and 196¾ tons mined during "the latter portion of 1900 yielded an average of "1¼ per cent. of Copper and 13 ounces of Silver:— "A winze was put down at this point for a distance "of 85 feet, and is said to have been in payable "ore all the way, but, owing to the water present, "this could not be taken out. Six inches of Chalcocite "are said to be showing in the bottom of the winze. "The shoot is said to have been 8 feet in width at "its widest point.

A former Government Geologist (Wm J. Harcourt-Smith B. A.) in his Report on this Mine dated 15th May 1897 stated... At 440 feet from the "entrance a strong body of ore was cut about 8 feet

Notes on The Eastern Proprietary Mine, Scamander.

" feet wide carrying Copper-glance and tile ore (mixed
" oxides of Copper and Iron), and a winze was sunk
" to a depth of 85 feet, which at the time of my
" visit was full of water to within abnt 12 feet
" of the tunnel-level. Mr Cameron, the Mine Manager,
" informed me that Crosscuts had been driven at 80
" feet, 15 feet West, and 19 feet East in lode matter
" all the way, but as the water became too heavy
" for baling an opening was made at 47 feet
" and crosscuts at this depth showed the lode to be
" 39 feet wide. A drive was also put in South
" along the lode, and the ore stoped out to within
" a few feet of the tunnel.
" From this stope and from the ore obtained in
" driving the tunnel, abnt 120 tons of hand-picked
" ore were sent away, returning an average of
" 28 per cent Copper and 17 ounces Silver per ton.
" There are also abnt 300 tons of second-class
" ore at grass, which appear to have been very
" carefully sampled, and assayed from 10 to 15
" per cent Copper and 10 ounces Silver per ton.
" A few feet beyond the winze a rise was started
" to connect with the surface in abnt 200 feet for air.

Notes on The Eastern Proprietary Mine, Seamander. 143

" This was put up 136 feet. For the last 80 feet
" it carried little or no Copper, and as the Air in
" the end remains good, it has been discontinued for
" the present.
" The East Cross cuts were at 832 feet from the
" entrance, 24 feet East and 10 feet West through
" Slaty lode-matter impregnated with Iron Pyrites.
" The face at present shows similar material,
" with a good deal of Kaolin, and on the hanging-wall
" is a thin vein carrying black oxide of Copper.
" Some 45 feet ahead of the present face, crystals
" of Chloro-bromide of Silver (embolite) are said
" to have been found in a trench on the surface, and
" the intention is to extend the tunnel under this point
" in the hopes of meeting a rich shoot of ore.
" On the whole the prospects disclosed by the tunnel
" working are decidedly encouraging, but it is
" certain that before the Mine can hope to produce
" regular supplies of ore, a main shaft will have to
" be sunk and equipped with machinery.
" As the length of the tunnel at that date was
" 870 feet, and it is now 961 feet it is evident
" that 91 feet has since been driven for the purpose
" of getting under the Embolite ore mentioned above

but there is no evidence of any good ore having been met in the tunnel after leaving the last crosscut, which is 132 feet back from the face.

Passing on from the stoped ground I measured 42 feet from the N. W. end of the stopes when I came to an Eastern crosscut driven 18 feet.

At 12 feet a winze was sunk on a vein of soft lode matter carrying black Copper ore. The depth of this winze is stated to be 16 feet, water having been struck at 12 feet, at water level four inches of black Copper ore was reported as found. —

51 feet N. W. another crosscut was driven East— 24 feet.

At 102 feet further in the tunnel and 65 7 feet from the entrance, a crosscut has been driven East— 6 feet and West 11 feet.

At 172 feet N. W. and 829 feet from the entrance are the last crosscuts in the tunnel, 24 feet having been driven East and 9 feet West, the tunnel being 6 feet wide this gives a total of 39 feet which the country is crosscut at this point, but there is no Copper ore showing, and only a little Sulphate here and there on the sides and back of the drives.

Notes on the Eastern Proprietary Mine, Scamander. —

The tunnel has been continued 132 feet beyond the last Crosscut without meeting with any payable ore. At a bearing of 168 degrees from the shaft at the mouth of the tunnel, and 127 feet distant, the collar set for an Engine shaft has been placed. Popper legs have been erected, and a 14 HP loose excentric winding engine with two 4 feet dia. drums has been laid on bed logs nearly ready for working. a horizontal boiler 13'x 4' is built in with stone and brick, both being housed under a good shed, but it would appear that funds ran short just before the plant was completed as the connections have not been made between the Engine & boiler. —

The Mine is situate 9 miles from the Scamander bridge (on the St Marys - St Helens Road). there are two ways of reaching the Mine, one by a good cart road for 6 miles to Thomas Berwicks' farm on the Scamander River, and then by 3 miles of a bush track (which at present is a good deal blocked by fallen trees from recent bush fires), this track if cleared of logs would make a fair cart-road in dry weather. The second way

Notes on The Eastern Proprietary Mine, Scamander.

is to go by boat up the "Right arm" of the Scamander River, and thence about 3 miles of a cart-road to the Mine. The bulk of the ore was sent out by this latter road, then sent by boat to the Main Road say 4 miles, and then carted to St Marys by teams 12 miles, the hill at the head of St Marys Pass rising over 1000 feet. From St Marys it was sent by rail to Launceston and then shipped to Smelting works.

After making a careful examination of the whole of the tunnel workings and seeing the evidences of Copper in the oxidised zone I am bound to admit that the Eastern Proprietary Mine is a genuine Mining Speculation, but it is only a Speculation, as I saw no evidence of any large body of ore either in the Tunnel or in any of the 13 crosscuts.

Much has been said at different times as to the width of the lode, being from 20 to 40 feet wide, but I would rather say that the lode Channel is up to 40 feet wide with veins of ore here and there through it.

The tonnage and assays which I have given on the Sketch plan showing the Stoped ground

Notes on The Eastern Proprietary Mine, Scamander.

were given me by the Legal Manager of the Co and are thus official. The tracing showing the Stopes is also from the office Plan.

Considering that the lode has been opened up for 1746 feet in various directions, covering 961 feet in length, and for over 600 feet in depth (the lowest 73 feet of depth being below water level) I should say that the ore sold 262. 6. T. C., averaging 17.44% Copper, and 11¼ ozs of Silver per Ton, is not sufficient to entitle the Mine to be looked upon as anything but a Speculation, more especially as Shaft Sinking in probably very wet ground must be the first work done if ore is to be obtained.

There does not appear to be any likelihood of sufficient Copper ore being won in the district to warrant the erection of a Smelting works, and under existing Conditions the cost of so much Carting, boating, Carting again, Railway freights and Shipping are too costly to allow of any profit being made if the ore has to be sold to a Smelting works. If the Mine belonged to the Mount Lyell Co they might be able to work it at a profit, providing the ore continued good

Notes on the Eastern Proprietary Mine, Scamander.

n a depth, but the ore will always have to be arted either to St Marys 12 miles from the Scamander bridge and fully 20 miles from the mine, Or it might be carted to St Helens ni about 10 miles if a new road were made trough the bush.

A good grade could be got for a 2 feet gauge tramway from the mine to George's Bay. (St Helens) ni 10 or 12 miles.

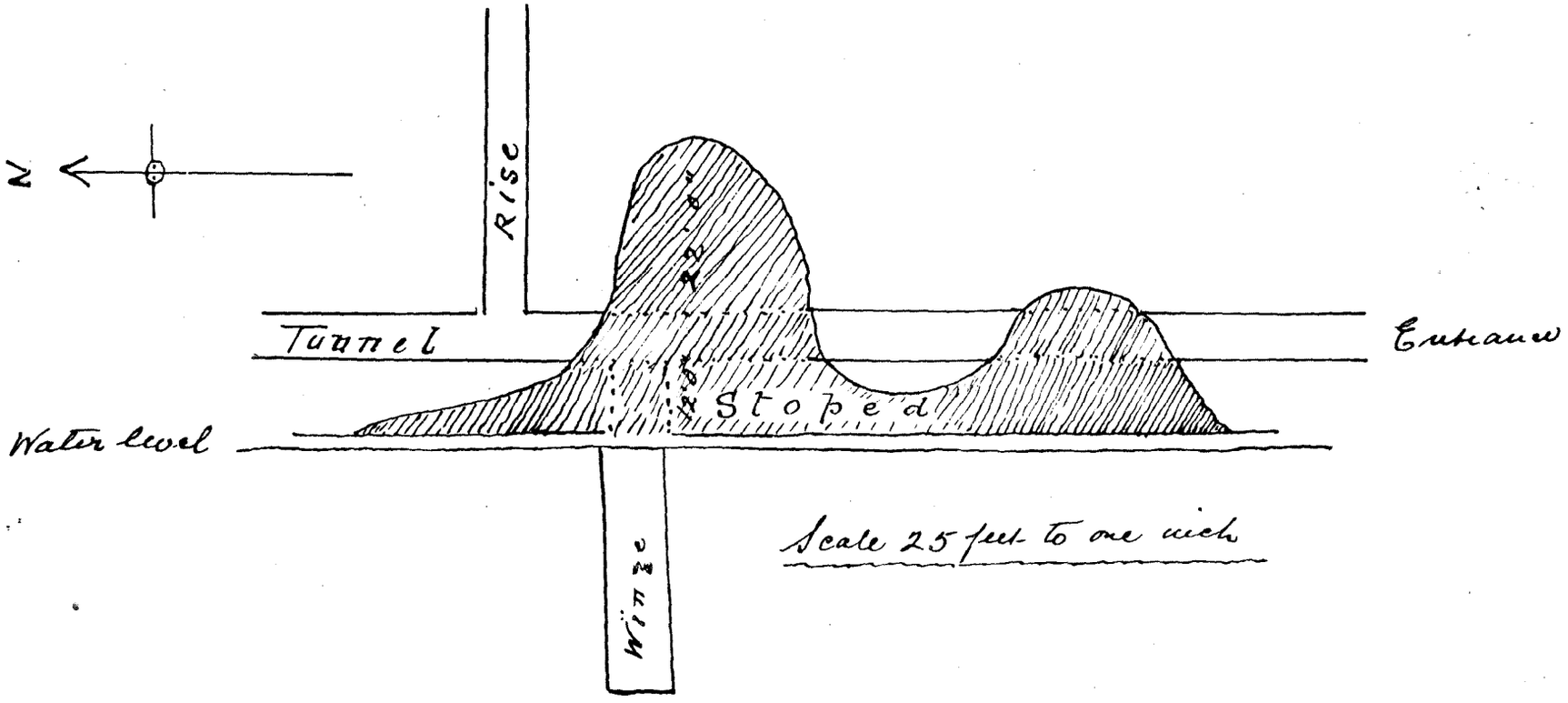
It is impossible to get Steamers into the Scamander River as the mouth is silted up by a Sand bar, and the Scamander bridge would also be a second difficulty to get any size of a Steamer under it.

The Machinery is all there ready for a start and could be put in working order within a week's time, but the Shaft would have to be sunk all the way from Surface and when the lode was cut it would have to be driven on N. W. fully 520 feet to come immediately under the good ore in the tunnel. I cannot therefore recommend it at present.

Luke Williams. Moonah. Hobart—
Dec 31st 1904.

The Eastern Proprietary Copper and Silver Mining Company N.L.
Scamander, Tasmania.

Section showing ore stoped out. Total quantity 262 tons 6 cwts, averaging 17.44% Copper and 11 ozs 5 dwts Silver per ton. The average width of lode stoped was about 3 feet.



Scale 25 feet to one inch

The tunnel is 961 feet long

Luke Williams
Scamander
December 23rd 1904

Notes on The Beulah Silver Mine, Scamander.

The Beulah was the richest Silver Mine opened on the Scamander field.

Situated on the North side of the River and about 3/4 of a mile from the bridge.

As this Mine has been idle for a long time and shafts are full of water it was useless of my going to see it, but I herewith give the latest official information obtainable about it.

The lodes consist of iron-stained quartz, the silver being chiefly in the form of Chloride in Cavities in the quartz. Where the quartz is more solid a good deal of pyrites occurs which is also said to assay well for Silver and Gold.

The lodes vary in thickness from a few inches up to a foot, and as exposed in the upper workings seem to be striking a little East of North, and dips at Angles of about 45° to the East, but they are somewhat erratic.

N° 2 lode is about 200 feet East of N° 1. and about 200 feet East of N° 2 a Main Shaft was sunk to a depth of 110 feet. At this depth water was struck, but only rose a few feet, and at 100 feet a crosscut was started and driven 134 feet West, but was discontinued after

Notes on The Beulah Silver Mine, Scamander.

meeting some hard granite "boulders" without cutting the lode. Except where these solid kernels occur, the ground is very soft, as may be judged from the fact that the Main Shaft, which is 9 feet by 3' 3 inches in the clear, was sunk for 14/6 per foot, and the Crosscut driven for 7/6 per foot and it is a pity that this Crosscut was not Continued.

In 1897 the Mine was worked by Tributors who burrowed out the most easily accessible parts up to about 40 feet in depth.

Since the beginning of 1896 to May 1897 about 51 tons of ore was sent away, the average assays from which were 92½ ounces silver per ton, One lot of 6 cwts going as high as 241 ounces.

From the fact that this Mine has been abandoned by Tributors though the lode was in such soft and cheaply worked ground, it would be unwise at the present time to risk Capital in trying to prove it further, and my advice is therefore to leave the Scamander Mines alone for the present as it would only be a very risky Speculation at best.

Luke Williams
Moonah. Hobart
Decr 31st 1904

Notes on the Scamander River Silver Mine. Tas.

This mine is situated on the South bank of the Scamander River, about a ¼ of a mile above the Scamander bridge on the Main Road from St Helens to St Marys.

It is on freehold property (See Chart – Lot 126 A. T. Kemp purchaser 640 acres).

The work on this mine was mostly done about 20 years ago.

The workings consists of two shafts and a tunnel, the first ~~shaft~~ is an underlay shaft sunk on the lode in a small gully about one chain from the River bank.

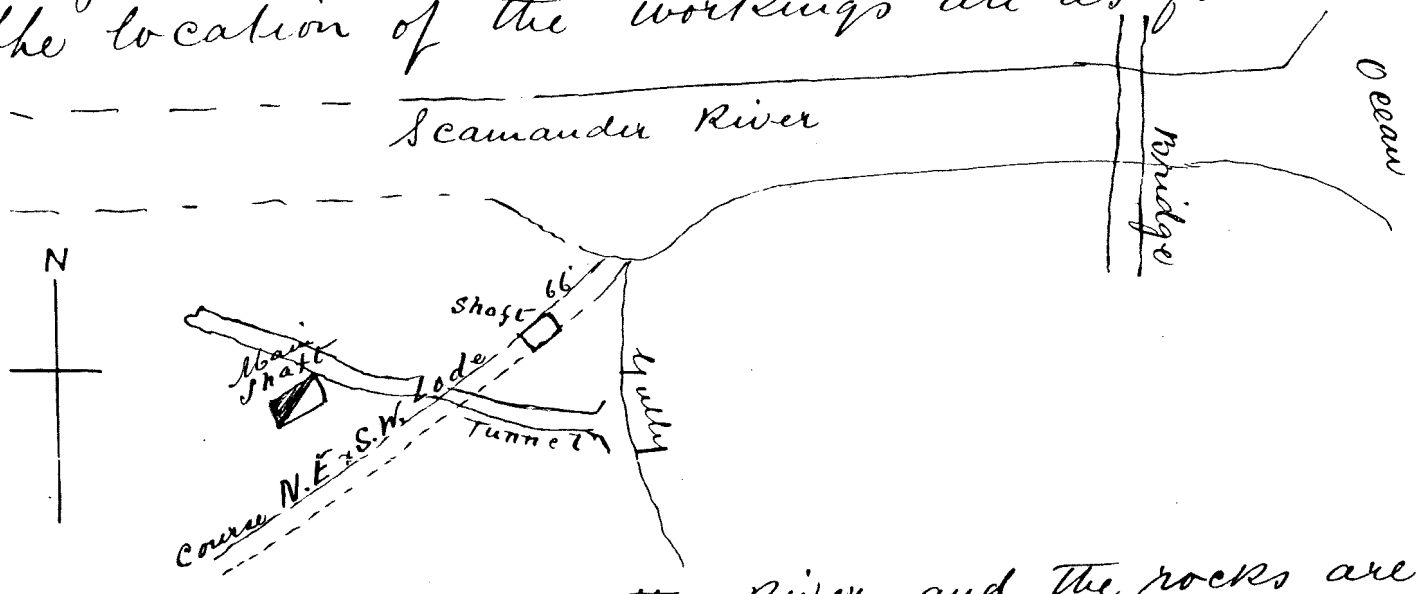
This shaft is full of water, it is reported to have been sunk to a depth of 123 feet, the brace of the shaft is only 30 feet above the River (Sea level). The heaps of ore lying near this shaft contain lumps of solid ore of a very complex character, containing, arsenical pyrites, Galena, Zinc Blende, Iron pyrites, pyrrhotite, and Copper Pyrites. the Matrix of the lode being quartz. A tunnel was driven from the level of this shaft brace for 120 feet, the first 90

Notes on the Seamander River Silver Mine. Tas.

feet was in the nature of a crescent — and the rest was on some quartz veins. These veins are said to have given high assays for Silver, but from the appearance of them I should say it would only be from picked Specimens.

The tunnel connects with a main shaft sunk from a point 35 feet above the underlay shaft and 65 feet above the River, this shaft is reported to be over 130 feet deep, and was sunk as far as water would allow. The Rock from the main shaft is mostly granite, this being near the junction of the granite and Slate Country.

The location of the workings are as follows.



As the lode crosses the River and the rocks are all jointed and broken the water will be very heavy at 200 or 300 feet deep. Mr G. Thureau

(3)

Notes on The Scamander River Silver Mine. Tas.

Reported on this Mine in April 1886 and stated that assay from stuff near the surface gave from 20 ounces Silver and 8 dwts 9 grains of gold, to 198 ounces of Silver and 9 dwts of gold per ton.

50 tons of the ore was sent away and treated, the average assay returned was 33 ounces of Silver per ton, but nothing is stated concerning any other contents.

From any inspection of this Mine and the refractory nature of the ore I would advise having nothing to do with it at present.

In October 1892 Mr Montgomery (Govt. Geologist) took two samples of ore from the heaps at Surface these were assayed by Mr Ward (Govt. Analyst) as under,

	oz.	dwts.	grms
Sample No 1, Quartz. Gold minute trace, Silver	3.	18.	10.

Lead none.

	oz.	dwts.	grms
Sample No 2, Sulphide. Gold distinct- Traces. Silver	41.	13.	18,

Lead 6%

The Ore from this Mine would have to be carted 12 miles, either to St Marys or George's Bay.

Luke Williams
Moonah. Hobart.
Dec 31st 1904

Luke Williams. F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
CERTIFIED ASSAYER; TASMANIAN GOVERNMENT, LABORATORIES.
MEMBER OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE NORTH OF ENGLAND INSTITUTE OF MINING & MECHANICAL ENGINEERS.
MEMBER OF THE AUSTRALASIAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.

First-class Certificated Mining Manager New Zealand Government.

Moonah, Hobart, Tasmania.

Jany 9th 1905

Messrs Knox Schlapp & Co.
163 William Street, Melbourne.

Dear Sirs

Herewith enclosed please find my a/c for examining and reporting on the Tin Mines and Water Supply of the Blue Tier District.

And Bakhap's Tin Section at Ruby Flat Branxholm.

Also the Eastern Proprietary copper Mine and the Chief Silver Mines at the Scamander River North East Tasmania, as per instructions,

55 days @ £3.3.0 per day £173.5.0
Outpocket-expenses during same period 30.1.3
Total £203.6.3

You will notice that the time occupied on the work is somewhat longer than I estimated in my letter of the 15th October, but in that estimate I did not allow any time for going into the question of Water Storage for power purposes, as instructions to

investigate the possibility of obtaining a water supply at a high level for power purposes only came to hand in your letter of the 4th Novr.

I might state that I am not charging for 4 days time which I gave to the Blue Tier business before going to Lottah and since my return.

While at the work I started as early as 20 minutes to 3 in the morning, frequently at 3, 3.30, and 4 O'clock, and worked until 4 to 2 a.m so as to get through the work.

The day I went to Ruby Flat we left Lottah at 4 a.m and drove 23 miles to Derby for Breakfast, then got a fresh horse and drove within a mile of the Mine, and walked through a dense undergrowth to the mine and examined & sampled it, returning for Tea to Derby. We again drove the 23 miles after tea arriving at Lottah after Midnight.

As the weather was fine during the latter part of the time that I was examining the Blue Tier Mines I worked from very early in the mornings until dark at the examination of the Mines and as so many of the workings have been idle for several years, I had in nearly every instance to either bale out a shaft or clear away the dirt which was blocking the tunnels with water & sludge.

Owing to the fact that I gave the whole of

the long days to field work, I was unable to do much towards writing my reports until I came home to Moonah. During one weeks' rough experience I had no less than 3 fresh guides to the various outside Mines, and they all admitted having quite enough of it when night came.

I worked right through the whole of the Xmas and New Year holidays at the Blue Tier and Seamander Reports and only completed and posted those dated 31st Decr at 1.45 a.m on the 3rd inst to catch the outgoing Mail for Melbourne that Morning.

I think the foregoing explanation is necessary for although I have taken longer than I first estimated (owing to the addition of the Water Scheme) I have been as diligent as it was possible to be, and I can assure you that in the 55 days charged for the work, I have put in on an average not less than 3 hours extra time each day so as to complete the work at the earliest possible moment.

The Outpocket expenses a/c also includes the Telegrams & Postage connected with the 50 tons of Zinc ore, and Mr Moyle's expenses are the same. If desired these can be extracted as they are all marked, Moyle, Hodge or Zinc.

So as to guard against any accident – in case of the loss of the Samples sent you from the Blue Tier Mines, I have kept duplicates of Samples N° 90 to N° 96 and have them stored here they having arrived today by Steamer from St Helens.

With the a/c I am enclosing Vouchers for the principal payments as follows.
Edward Davis £2., James Johnston £1. 6. 0 Geo Macmichael £2 + £4. 4. 0. T. K. Bakhaps £1. 10. 0. M. A. Cook £4. 0. 0, E. A. Cook 15/-, J. Direen £3. 0. 0. William Archer 7/- Percy Maddox 7/-, G. B. Cunningham 7/6, J. Farquhar 5/-, J. G. Walker 18/- and Mr John Moyle's a/c for £1. 0. 6, & C. Jarritt 4/-. all of which I trust will reach you safely and be found Satisfactory.

I shall be pleased to know the results of the Tin Samples when assayed.

Yours Faithfully
Luke Williams

ZEEHAN MINING.

(By Electric Telegraph.)

(From Our Special.)

ZEEHAN, January 8.

The mine manager of Stanley River tin mines recently broke a sample taken along the north lode for a distance of six chains. This has yielded, on crushing, 4.15 per cent. tin oxide. The stone is of a very friable nature, and is readily dressed. In taking the sample, all the enrichments which range in parts of the lode from 20 to 4 per cent. of tin oxide were excluded. This lode is exposed along the top of a hill on the company's property some 1,400ft. above the Stanley River.

Messrs. Wm. H. Cundy, mining surveyor, from Bendigo, and A. D. Sligo, leave on an inspection of Parson's Hood and Stanley River tin fields to-morrow.

Total output of the field for 1904 amounted to 52,151.75 tons; value £197,047 7s. 9d.

ZEEHAN MINERAL YIELD.

(By Electric Telegraph.)

(By Our Special.)

ZEEHAN, January 8.

The output of ore from the Zeehan district for December last totalled 4,391.1 tons; value, £15,607 3s. net.

The Tasmanian Smelting Co. purchased for local treatment 3,194 tons for £9,502 3s. at the mines. There were exported via Strahan, 89 tons galena, value £1,027 19s.; 84.8 tons zinc blende, valued at £275 6s.; 13.8 tons of tin ore, valued at £1,104; 30.5 tons copper ore, valued at £274; and via Burnie, 148 tons galena, value £1,554; and 831 tons zinc blende, value £1,869 15s.

The chief individual outputs were:—
Montana, 352.5 tons, £4,080.
British Zeehan, 464 tone, £3,507.
Hercules, 1,266 tons, £2,239.
North Farrell, 148 tons, £1,554.
Mayne's tin, 10 tons, £800.
Primrose, 627 tons, £760.
Florence, 67.25 tons, £700.
Comet, 418.75 tons, £662 4s. 10d.
South Comstock, 118 tons, £604.
Oonah, 74 tons, £596.
Murchison River, 63 tons, £470.
Ring Valley, 25 tons, £239.
Red Lead, 67 tons, £83 10s.
Silver King, 32 tons, £32.

The Hercules output comprised 631 tons of zinc blende, value at £1,419 5s.; 601 tons zinc lead, £751 5s., and 34 tons gossan, £68.

The Comet output comprised 73.75 tons galena, valued at £441 9s. 4d., and 345 tons gossan flux, £220 15s. 6d.

The South Comstock yield comprised 34 tons of galena, value at £324, and 84 of zinc blende, £450.

The Primrose yield comprised 427 tons of zinc lead, valued at £310, and 200 tons of zinc blende, £450.

160 A 15

Copy.

BLUE TIER TIN MINES PROPOSED AMALGAMATION.

The Mines are in three groups owing to the hilly country. For convenience I will call them the "ANCHOR" group, "CENTRAL" group and the "CREAM CREEK" group.

ANCHOR.

Eight mines comprise the Anchor group, thus: Anchor have 100 stamps with dressing machinery, treating about 2400 tons of stone a week it is the most important mine of the whole field, and is at the lowest level on the field. It will eventually be a good thing if it could be included in the Amalgamation, but not until all the other mines have been secured, and also the Water scheme.

(1) AUSTRALIAN. The most valuable mine to secure; it holds 255 acres in 20 acre and 5 acre blocks, has two proved good faces, the "Don" and "Puzzle", holds 1¼ mile on the line of lode or dyke. They have 30 heads of stampers and buddles of poor design, and have treated large quantities of stone for ½ to ¾ per cent tin oxide. Battery site is at point where a deep level tunnel can be driven under the Tier, and water can be picked up and again used by the Anchor Co. 500 feet lower down. I think the Australian Co. would welcome an amalgamation with a strong sound capable Co. such as is now proposed.

(2) CRYSTAL HILL. Take up these sections (120 acres) at once as they contain large bodies of Tinstone which could be sent either to the Anchor or Australian batteries. The initial cost for survey fees and first half year's rent would be about £50.

(3) LIBERATOR. Held by the Anchor Directors (120 acres) and is for sale with all machinery. It can stand for the present.

(4) WOOLLEY'S. They ask £1000 cash (for 20 acres) to sell it. Probably it could be bought for half that sum or an equivalent in shares. It can stand for the present.

(5) LOTTAH. This being held by F.G.Duff (70 acres) It can be dealt with along with his other sections.

(6) CAMBRIA. Held by Anchor Directors, (180 acres) Will stand at present.

(7) EAST COAST BISCHOFF. Can remain at present.

CENTRAL GROUP.

There are 13 mines in the "Central" group, thus.-

(1) FULL MOON. The highest average value ore on the Tier was obtained from here. It is the best mine so far proved. It is a 40-acre Section.

(2) HALEY'S LEASE, (20 acres) Held by a local syndicate of ten of the leading mining and business men of Lottah. They offered it to me for £500 cash, or an equal value in shares of any good Company, and will give a six months' option for about £30 deposit.

(3) HALEY'S EXTENDED. An important mine held by F.G.Duff and should be secured.

(4) BEALES MINE. An important property, (40 acres) good tin stone

proved to 22 feet deep, with big possibilitdes; it is situate between Mount Macmichael and Little Mount Macmichael, in the Pass between the two mounts. It is held by C.L.Stewart, the present Treasurer of Tasmania, and could I think be easily arranged for by giving shares without cash.

(5) KENT. A large quantity of alluvial tin has been won from the stripping, and several acres of the rock has been bared. I suggest taking up the ground so as to secure the tin bearing rock. The cost of taking it up would be about £50 for say 80 acres.

(6) WELLINGTON. In the early days these blocks (of 60 acres) were looked upon with favor and a lot of money spent driving tunnel, sinking shafts etc. They should be taken up; the cost would be £30 or £40 for survey fees and first half-year's rent.

(7) PERENNIAL. Take up this block, (20 acres); cost about £15 for survey fees and first half-year's rent.

(8) IDA CROWTHER. (part of 20 acres) Good surface tin obtained by sluicing to Rock. On line of Haley's dyke, held by F.Maddox.

(9) ETHEL. Held by Australian Tin Co. or F.Maddox, I think the latter, (part of 80 acres) It is on the line of Haley's dyke and should be included. I think Maddox would be willing to come in for an interest.

(10) SAINT GEORGE, 40 acres, held by F.G.Duff.

(11) HOPE. Not all held but portion included in 20 acres No.3834 in name of W.P.Kirwan, controlled by F.G.Duff. They should be included.

(12) GIANT. 20 acres. Take it up cost about £20.

(13) MASHER. Leave this lie for the present as no use can be made of it just now.

CREAM CREEK GROUP.

(1) CREAM CREEK. Take up 120 acres or more (now forfeited). It looks like a valuable mine, large bodies of tin stone there, mine well situated for working. The machinery block of 5 acres held by W.H.J. Thomas can be excised at present; time enough to negotiate for it when required. Cost of survey fees and first half year's rent about £50.

(2) SPINKS' SHOW. 12 acres, can be bought for £100 or £200. The alluvial is good and can be let on tribute if desired. It would work in well with Cream Creek.

(3) NICHOLSON & BRYCE. 5 acres. If forfeited take it up. If held let it stand until required. Stone carries good tin.

(4) DICKENSONS. 10 acres. As the alluvial is now being sluiced on this claim, and good tin stone specimens are occasionally found, I would wait further developments before doing any business.

(5) CONNELLYS. Is forfeited and could be taken up, but as it is so far North I would advise leaving it alone for the present.

N.B. The figures denote the order of precedence in the value and

importance of the properties.

Approximate cash required to take up sections, pay survey fees and Half-year)s rent,-£225.

Deposits, Haley's Lease £30

Spinks Show £20 ?

BLUE TIER PROPOSED WATER SCHEME.

The first thing to do is to approach the Tasmanian Government and secure the rights to the Water and to the Dam Sites marked by Mr. Rahbek on his plan, and also the No.7 flat Damsite in addition.

Water Rights are £1 per sluice head per annum.

Dam Sites are charged by the acre but I cannot say from memory how much it is.

It will be necessary to secure the Wheal Tasman Flat Site before making anything public, or the Anchor Co.may do so, they having had the idea in view for some time past.

Earthwork embankments can be built for 8d.or 9d.per cub.yard.

For water storage and power see pages 17 to 22 of my Report dated Decr.28th,1904,where the matter is fully dealt with.

WHEAL TASMAN FLAT. An embankment 5 chains long and 8 feet ~~main~~ mean depth would hold 200,000 000 gals. If 17 chains long and 30 feet deep 836,000,000 gals. and cover 200 acres.

This Reservoir site (See Rahbek(s Report) gives in feet the

following head at Battery Sites.

Australian Battery Site		1050 feet
Liberator	do.	1050
Crystal Hill	do.	950
Anchor	do.	1600

THE MOON DAM bank, if made 288½ feet long and 13 feet deep would cover 10 acres with water and hold 20,000,000 gals. This water could be run into the Tasman dam.

RAHBEK'S COMPENSATION Reservoir, if 40 feet deep would cover 70 acres and hold 361,000,000 gallons.

No.7 FLAT. 11½ chains long of bank will give 70 feet deep of water (and cover Rahbek's Compensation flat). This would be the reservoir to take pipes from; the fall to the proposed generating station is 1550 feet in about 2 miles, and to the CREAM CREEK old battery site 750 feet fall. The Kent mine is below the Reservoir 125 feet.

There is a head of 1550 feet from the No.7 Flat Reservoir site to the proposed electric generating station on the Wyniford River at the Pioneer Co's lower water races.

Only one Race (the old Cream Creek) would require to be given any water at a high level in Summer time: it carried 5 heads at the time of my visit and is about 100 feet below the Reservoir outlet.

The No.7 Flat has about 6 square miles catchment. Rahbek's Wheal Tasman Flat has about 1¾ square mile catchment area.

Kent and Cream Creek Mineral Leases and No.7 Dam site not granted

No.7 Flat covers and includes the areas of Clark's, Direen's and Houston's dredging claims.

Wynifŏrd Dam surveys show 306 acres.

Kirwan's water rights. Written promise of first offer of purchase.

Water Rights	3 heads	
	7 "	
	15 "	
~~Kent Water Right~~	~~10 "~~	~~35.~~

Mineral Leases.

Crystal Hill	145 acres	
Old Crystal Tin Mine	40	
No.1158	53	
1154	20	
1198	53	
1163	30	
1156	80	
1164	60	
1159	60	
1160	80	Kent Mine
Cream Creek	79	
B0	40	
D0	20	760
Machinery Site) 1204)	5	5

Tasman Flat would give 562 H.P. Then all the reservoirs combined would give 1926 H.P. See page 18 of my report Decr. 28th. '04.

All the Main Blue Tier water flows into the Wyniford River, through the No.7 Flat, and then on to the Pioneer, Garibaldi and other mines.

NEGOTIATIONS FOR AMALGAMATION.- I think I can carry these out with Haley's Lease, Maddox, Stewart, Spinks, Wooley's and Liberator if desired. The Australian and F.G.Duff can probably be arranged for in Melbourne.

RATIO OF INTERESTS. If a Company of 100,000 shares was formed to include all the mines (except the Anchor) I should (subject to revision) value them thus.-

Australian	10,000
Duff's Sections	10,000
Cream Creek	5,000
Liberator	4,000
Crystal Hill	1,000
Beales	1,000
Haley's Lease	1,000
Wooley's	500
Spinks	200
Kent	200
Wellington	200
Perennial	200
Ethel	150
Ida Crowther	150
Giant	100
	33,700.

	Shares.
MINES	33,700
Water SCHEME VALUE	66,300
	100,000.

(sgd) LUKE WILLIAMS,

Melbourne, Feby. 8th, 1905.

EXTRACT from the General Manager's Letter of 31st Jany.1905.

BLUE TIER, L.W.'S REPORTS.

Additional letters by L.W.of Jany. 18th and 20th are to hand and noted, also "Mercury" cuttings re "Anchor Mine", etc.

The article on the latter in the "Argus" of the 24th inst. astonished me, as it did you, and induced the hope that there might be no more of them. Who the reporter is I do not know and can not guess. The article is well written and to the point which makes the authorship all the harder to surmise. Even H.J.Daly would not write as well.

Evidently the Blue Tier seems to be on the point of "looking up" a little, and it behooves us to act very cautiously. For this reason also I have not here had L.W.'s remarks on the first set of plans put on the duplicates you sent over, but am returning both sets to you to have the filling in done in Melbourne . At this office the plans would attract attention and lead to gossip and talk. The next direct boat will take the parcel per the purser.

I note the matter of this tin district will be discussed during the Board's visit here. I believe it is patent that the revived spirits of the Anchor Co. and Mr.J.B.Lewis's reputed hopefulness as to the property becoming "one of the most important and profitable in the world", have both to be taken with the proverbial grain of salt. Assuming it possible that the profit can be brought up to a full 2/- a ton of rock treated,

the Anchor Mine would, on its present working basis of 136,655 tons of rock yearly, yield but £13,655-10/-/,-by no means a big result. Even if the output were more than doubled_ say increased to 300,000 tons per annum (roughly equal to the output of the Mount Lyell Mine) the profit would only amount to £30,000 a year. The above sanguine remarks are therefore considerably and heedlessly exaggerated. I daresay the Mount Lyell Co.would not feel that it was specially successful in its undertakings unless it threw off a minimum of £100,000 annually. To achieve this would require 1,000,000 tons of rock to be handled like the Anchor, or over 7 times as much as the Anchor now crushes, and over three times as much as the Mt.Lyell Opencut supplies in tons. This means very large and extensive mining, and it would, one may expect, tax the entire Blue Tier to come up to it.

It is apparent at the outset that the Blue Tier, though worth investigating and eventually securing as one individual unit for work on a gigantic scale, is not sufficiently rich to justify its being regarded as a possible substitute for the 2 mines which the Company is now working. This means that even if we get the B.T. we will still have to look elsewhere to yield a 10% revenue annually on the Coy.'s 1,200,000 £1 shares, or anything like it. This means £120,000 = 1,200,000 tons Anchor rock @ 2/- per ton = 4 Mt.Lyells = about 2/3 of Rio Tinto in tons. But, as pyrites goes 8 cu.ft.to the ton and granite 13 cu.ft., it really means, in bulk, 6.5 Mt.Lyells = 1.1 Rio Tintos

It may be answered that the Anchor mine is the poorest property on the Tier, but even so, if the latter is assumed, on the whole as twice as rich as the Anchor, a 10% return on the Coy.'s capital means more extensive operations than the Tier would be available for for a very considerable time. No doubt years would elapse before the collective tonnage output could be brought up to 600,000 tons of granite annually = 2 Mt.Lyell opencuts in tons, or 3¼ do.in bulk or size.

Technically I am sure the Tier presents no difficulties, except that of the water supply. This will have a direct, limiting application on the magnitude of the operations too,and it is doubtful if there is water enough in the district to keep an aspiring Rio Tinto opencut on its legs.

Luke Williams. F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
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OF VICTORIA, MELBOURNE, AUSTRALIA.
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First class certificated Mining Manager New Zealand Government.

Moonah, Hobart, Tasmania.

Jany 20th 1905

Messrs Knose Schlapps & Co
163 William Street, Melbourne.

Dear Sirs

Under Separate Cover I am posting you by this Mail, Copies of the Hobart-Mercury of the 19th and 20th inst- giving Reports and criticisms on the Anchor Tin Mine, at Lottah.

As I was in the locality of the Anchor Mine at the time the Meeting was held in London (Dec 14th) and had just inspected it- in your interests, I have thought- that- some reference to the published Report- by me may not- be out- of place.

I have marked the paper of the 19th inst- in 12 places and enclose a reference to these 12 Statements. The Leaders "After Many days". and "The Demon Capital" are worth reading. I have marked both of them. If I can obtain a Copy of the Report- I will send it- to you. Yours Faithfully

Luke Williams

Some Notes on The Anchor Tin Mg Co's 1904 Report.

1 The Co's Office year closed with Slightly different figures to the Mine Office figures. —

2 It would be reasonable to expect that the Costs cannot be expected to come below 2/- per ton.

3 These Bins are to hold 6000 tons of Stone, but I fear they will not be a success as they are to hold the big rocks before going through the 30 x 15 inch Rockbreaker, and these large Stones will be very difficult to get through the small doors.
If these Bins were filled with Stuff broken small by the Crushers I should say they would be a valuable addition, but not as now arranged.

4 At the date of the Meeting only 50 heads of Stampers were able to work owing to a short supply of water power.

5 There being from 40 to 60 feet in depth of barren granite overlying the Tinstone it is quite possible to reject that Stone when the water supply is low, and by Stacking it on the benches when broken, it can be taken to the battery as desired

when the Water Supply is good, I consider that it would be Cheaper and better to stack a Supply of Reserve Stone on the upper benches, in preference to trucking it to the Buis as proposed by the Manager.

6 5 lbs per ton, (is equal to 11¼ lbs per cubic yard) and would at present prices give @ 10 per lb 4/2 per ton value, and costs at 2/6 per ton would leave a profit of 1/8 per ton. —

7 £8500 profit.

8 This Alluvial has not been thoroughly tested yet, and its value is not known.

9 Mr Lewis has hope and says ... this Mine should be found one of the most important and profitable in the world. —

10 Practically inexhaustible tin Rock, but values at a depth have never been tested.

11 Though no rich bodies have been found Mr Lewis is (I think) aware that the old faces are better than those he is working, that also is the general impression and he is now going to crush from the old faces. —

12 Mr Lewis is said to be sanguine of success. —

Luke Williams Monah Jany 20th 1905

Hobart Mercury 19 Jan. 1905

ANCHOR TIN-MINE.

IMPROVED VALUES ANTICIPATED.

(Financial News," December 15.)

The third ordinary general meeting of the shareholders of the Anchor Tin Mine Limited took place yesterday at the office, 3 Crown-court, Old Broad-street, Mr. C. Williamson Milne, the chairman of the company, presiding.

The Secretary (Mr. J. Lawrence) read the notice convening the meeting and the auditors' report.

The Chairman: Gentlemen,—I need not detain you very long with my observations to-day. I think the outstanding feature of the report, which we have presented to you this year, is the very considerable increase in the tonnage of the stone crushed over that of any previous year, and also the very considerable reduction in the cost per ton of mining and milling the stone and recovering the tin. We show an increase from 108,000 tons, which was our largest tonnage in any period before—which was really a period of thirteen and a half months—to 136,655 tons for the period of twelve months ending June last. The recovery of black tin for the twelve months was 243 tons 13cwt., compared with 258 tons 3cwt. for the previous period of thirteen and a half months, so that, if anything, the product in the twelve months is greater than it was in the corresponding twelve months; indeed, the average is really fourteen tons greater for the year. One point which must strike every shareholder is the fact that at the Anchor Tin Mine we have arrived at a stage when it will not be possible for us to reduce our working costs very materially. I am glad to be able to tell you that during the past year our manager has been able occasionally to keep his working costs at the mine down to as low a figure as 2s. 1d. per ton—an almost phenomenal figure. We have been expending a certain amount of money on improvements at the mill and at the mine—namely, in the erection of new storage bins—which will enable us to keep the mill fully supplied with ore at all seasons—in rainy and in dry weather. We are also constructing a new breaker station, which ought to enable the rock to be delivered to the battery in smaller sizes, and have the effect of helping to increase our stamping capacity. Our water-race has answered expectations so far; but I must remind the shareholders that we have not been able to test it severely by reason of any period of drought having occurred. Since the flume was completed the seasons have been more than usually wet, and consequently the supply of water has always been sufficient to keep a very large number of stamp heads running. That is noticeable in the fact that while in the previous year we had an average of 76 stamps working, this last year we have had an average of 91 stamps, and for the period up to date I believe the average is even greater; so that it is not possible for us yet to say whether or not our flume, in the event of our having a prolonged period of severe drought, is certain to bring in an ample supply of water; up to the present, however, we have no reason to be otherwise than satisfied.

The Grade of Ore.

Then, another feature which is to be noted is the question of the grade of ore, and really the whole future of the Anchor tin mine depends upon that. Your directors and your manager are absolutely sure of this—that it is impossible to discriminate or select the ore. In Mr. Mitchell's time, I believe, a certain amount of selection was attempted. When I say "selection," I should say that at times he confined his work to certain portions of the face, where he found richer ore, and did not always remove the average of the mine. That is mentioned in the manager's report, where he refers to "the previous methods of working by which the patches over ordinary values had been worked out as far as possible, leaving poorer ground between." He goes on to say that "the policy of picking the best stone had the inevitable result which could not be evaded." When you came to work the whole of the faces uniformly you learned the average grade of the ore, and Mr. Lewis does not assure us that we are altogether through our trouble in that direction. The latest cable, received on 8th inst., showed an output of 7 tons 5cwt. from 4,800 tons of ore, or an average of 3½lb. of tin to the ton. In his report, Mr. Lewis gives expression to his belief that the grade of ore will be increased during next year to something like 5lb. per ton of ore crushed, and if he succeeds in getting such a result, and the price of tin keeps up or continues to rise, which there seems every prospect of its doing, then we ought, as the directors indicate, to be able to work the mine with a margin of profit. I would just like to point out to you what 1lb. additional of black tin to the ton would mean to us. Taking the tonnage of last year, it would result in an increase of something like 60 tons, and this should mean about £5,000 of increased income, without any increased cost in the mining and milling of the material. We have, in addition, to expect that Mr. Lewis will succeed in reducing the cost per ton by reason of the improvements in the equipment and plant, by something like 6d. per ton. This would, of course, mean a saving of about £3,500 in addition, which would be all to the good. In one of the latest letters, which we received on 12th inst., Mr. Lewis in writing says that he has at last learned that the Tasmanian Government are going to provide the money for the new Government road up to the mine, and this should, we anticipate, also contribute to the more economical working of the property. There is one item in the report which I must draw your attention to, and that refers to the alluvial flat beneath the battery. We have there some 15 acres, and, so far, Mr. Lewis has only tested it to a depth of about 7½ft. We believe, however, that the average depth of the deposit is something like 15ft., and that the lower stratum contains the richest deposit of tin, so that there is every reason to believe that when this alluvial flat is tackled in the way Mr. Lewis intends to tackle it, the result will very considerably exceed his conservative estimate of profit. At only three-fourths of a lb. per yard it will pay well to treat that flat, but if we get anything like 4lb. per yard, it should be equivalent to something like £10,000 of profit. Now, in suggesting 4lb. per yard, I think I am taking a not unreasonable estimate, because a Chinaman who is working a similar piece of ground below ours is claimed to be getting as high as 13lb. per yard of black tin. I would like to draw the attention of the shareholders to the concluding paragraph of Mr. Lewis's report, which, coming from such a man is, I consider, full of hope for our shareholders, and indicates that in the Anchor tin mine we have more than a fighting chance of success. He says:—"There is little use in bringing our working costs low unless our returns show an ample margin above them, and this I hope this year to achieve. Should this result be realised, this mine should be found one of the most important and profitable in the world."

The Working Costs.

I know that already some notice is being taken in mining circles of the point to which Mr. Lewis has been able to bring down our working costs. A gentleman in the City of London, who I do not suppose knew that I had any connection with the Anchor tin mine, remarked to me the other day that there was a tin mine called the Anchor mine in Tasmania, which had got its working costs down to considerably under 3s. per ton. How he got his information, or where he got it from, I have no real means of knowing. It certainly did not come from any of the directors, nor did it come from our secretary, Mr. Lawrence; but it shows that even in London, far away from Tasmania, there are men watching the results obtained by mining engineers at that distance. Then, I think, it may be interesting for the shareholders to know that, after reading over all the previous reports made on this property since the commencement of the company by our own managers, who have been in charge of the property, by men who have visited it, and by the Government geologists, I thought I could not do better than collect the whole of these, and send them out to Mr. Lewis, asking him to study them, and let me have his views as to the various theories and suggestions put forward by these gentlemen, and also to let me know why in certain cases their expectations had not been realised. The geological authorities have naturally got their individual opinions as to the genesis and formation of the remarkable ore deposit we are working, and, as usual, there is a certain amount of conflict between them; but they are all agreed as to the existence of an ore body that is practically inexhaustible. It is only and entirely a question of values. I may say that Mr. Lewis sent me home a very long and interesting letter, dealing with the whole of the points which had been brought out by these different authorities, and he has not shirked a single question. He has dealt with every one of them, and he has indicated, wherever these authorities expected good ore to be found, that he has endeavoured to get on the track of their expectations. It is not due to any fault of his, or any lack of search on his part, that he has not come upon any large body of higher grade ore in the property. We have to look in the future to an improved value over the whole extent of our faces, and not to trust evidently to coming now and again upon any large tonnage of rich stone. The most encouraging feature of all is the confident way in which Mr. Lewis bases his expectation that he is going to get an increased value during the current year. I do not think I should sit down without paying a tribute, in which I am sure all my colleagues join, to the ability and the energy which Mr. Lewis has thrown into his work at Lottah. His letters home to us have been very ample, and his explanations of the conditions existing at Lottah have been both lucid and interesting. I think it is only due to him that we should express our appreciation of the way in which he has done his work during the year that has passed, and our confidence that in his hands, if it is at all possible to make the Anchor tin mine a profitable property, Mr. Lewis will be able to achieve that result. With these observations I beg to move the adoption of the report and accounts.

Mr. Henry H. Cochrane: I have very great pleasure in seconding the chairman's proposition. I may add that I can thoroughly endorse all that he has said respecting the ability and energy which Mr. Lewis has displayed at the Anchor tin mine.

The motion, on being put to the meeting, was unanimously agreed to.

The Chairman: I have now to move,—"That Mr. Henry H. Cochrane, who retires by rotation, be re-elected a director of the company." Mr. Cochrane attends to our business with unfailing regularity, and comes a long distance in order to be

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at our board meetings. He resides in the North of England, a part of the country where there are, I should say, a very large number of our shareholders, and as such he is distinctly a representative director. We value his services highly, and I have pleasure in moving his re-election.

Mr. Adam Lee seconded the resolution, which was carried unanimously.

Mr. Cochrane: I am extremely obliged to you, gentlemen. I have always taken a great interest in the Anchor tin mine, and shall continue to do so. I only hope that next year Mr. Lewis's ideas of profits may turn out to be correct.

On the motion of Captain Deedes, the auditors, Messrs. Monkhouse, Stoneham, and Co., were reappointed.

Mr. Alfred Deedes: I do not think we ought to close the meeting without passing a vote of thanks to our chairman, who has addressed you in a manner which I am sure will commend itself to you. He has taken an immense deal of trouble and devoted a great amount of time to the interests of the Anchor tin mine. I trust that the anticipations he has given expression to, and which Mr. Lewis, our manager, is pretty sanguine will be realised, will, in the near future, be accomplished.

Mr. Lee seconded the motion, which was very cordially received.

The meeting then separated.

AFTER MANY DAYS.

The report of the third ordinary general meeting of the Anchor Tin-Mining Company, held in London on the 14th u.timo, appears in this issue. It tells a most satisfactory tale of perseverance rewarded, and the consummation of hopes which, to the ordinary observer, seemed for a long period futile. For the twelve months ending June last the tonnage of ore increased from a total of 108,000 tons in the previous year, to 136,656 tons. (It may be mentioned here that the proceeds of ore, and portion of metallic tin shipped to London from Hobart by the local agent for the company, realised £18,703). This is a matter of detail; the real point around which interest and warm appreciation centre is, that the mine, after many years of experimental working, is realising the always unwavering opinion of its owners, that it only needed proper management to become a permanent dividend-paying property. The Anchor mine has been subjected to many mutations. At times it has suffered from injudicious methods of working, at others the eyes have been picked out, and a passing show of prosperity deemed of more importance than establishing accurate data as to average value, and possibilities of working with a constantly-abiding margin of profit. The possibility of reducing working expenses has also been a vexing question, subject to many differing opinions, according as varying bases of calculation were depended on. Then, again, uncalculated expenditures in upkeep and extensions have ever and again taxed finances, and throughout its history the Anchor Mine has served as an evidence of what mining in Tasmania involves before the dividend stage is assured, and of what can be accomplished by persistent energy. The mining manager now expresses hope that returns will show an ample margin above working costs, the latter having been very materially reduced, and that "the mine will be found one of the most important and profitable in the world." So many Tasmanians have been directly and indirectly interested in the Anchor that this aspiration will find widely-reaching approval. Geological authorities agree as to the existence of an ore body that is practically inexhaustible. though they are not in unison as to its genesis and formation, or its value. Development in the Anchor mine has, however, reached a stage which gives assurance that to go on is to prosper. It points, also, to the possibilities of not one, but many, similar gigantic ore deposits being existent within a moderate radius.

20 Jan 1905

THE DEMON CAPITAL.

The particulars which we published yesterday of the operations of the Anchor Co., whose mine is situate at the Blue Tier, will be read with interest by many, and should be read with profit by some who very much need to understand the conditions of industrial success. The Anchor Mine is in the hands of a number of bloated foreign capitalists, some of whom actually live in Yorkshire, who have put their money into a distant venture, and have been guilty of the enormity of spending it for many years in the payment of wages, the erection of machinery, and the carrying out of extensive works in order to obtain an ample supply of water, without which the stone mined cannot be made to pay. Those who so strongly advocate the keeping of Australia for the Australians, though many of them are only immigrants, after all, will, doubtless, be shocked at such a state of affairs as is revealed in our report, and we may expect that the Federal Parliament will be asked to pass a law to prevent "foreign" capitalists from spending their money in developing the possibilities of the mineral deposits of this State, especially in places which have been abandoned as non-payable by the noble army of prospectors and fossickers. At least, if there is any consistency in the Labour Party, it will at once take steps to put a stop to so outrageous a state of affairs, and proceed to confiscate the plant and workings for the benefit of the true workers, who are specially those who do as little work as possible. The only drawback to this highly democratic proceeding is, that the workers could not possibly make the ground pay; even if they were inclined to do the necessary work, for the success of such a venture depends on many things which the workers do not possess, and on intelligence and qualities which they very seldom show. In fact, this Anchor Co., so far as its operations have yet proceeded, teaches the great lesson that large operations, especially in cases in which the ground is poor, can only be successful when they are carried on by those who have plenty of capital and are willing to risk it, and who are able to engage and gain the confidence of those who have the requisite skill to carry on operations which depend for success on constant attention to a number of minute details. In parts of Victoria very small average yields of gold, often not more than 3dwt. to the ton of quartz, have been made to pay, while in other places double that yield cannot be made to leave a profit. In tin mining in this State the problem to be solved is, to make a small average return of tin yield a profit, and this is the problem which the Anchor Co. seems to be in a fair way of solving. When the company was launched in London, under somewhat peculiar circumstances, to which we need not further refer at the present time, very much better things were expected, because the locality had given very rich yields to small parties in the early days, but when the stone was taken as a whole the average yield was found to be so low, that manager after manager was unable even to pay his way. Now, the company seems to be in course of solving the problem of making a return of 3¼lb. of tin to the ton yield a profit, and there is good reason to suppose that before long the average yield may be as high as 5lb. of tin to the ton.

It may be worth while to consider what all this means, and especially to the workers, who, however, will probably be the last to learn the lesson. For, after all, the Anchor mine is but typical of many mines in Tasmania, where the conditions of mineral working are somewhat peculiar. There are large areas of minerals in various parts of this State which can only be turned to profitable account under certain conditions, and which must be worked on a large scale to be of any real value. Those conditions are, the investment of a large amount of capital, the carrying on of unprofitable operations for a considerable length of time, and employment of the very highest skill that can be got, either here or elsewhere, for liberal payment, and with a long engagement. We see that this is true of the West Coast, which has been developed under these very conditions, and which may be said to owe its existence as a mining field to the skill of a few men, and to

Mercury
20 Jan' 05
(cont')

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the investment of capital freely in what at one time appeared to be a very hazardous undertaking. The benefits which the workers have received from these things have been, and are still, very great, yet there are some, many, we are afraid, who would deliberately risk all this for the sake of some fanciful claim about the rights of labour. Leaving on one side the often supremely silly notions about Labour and Capital, which are not antagonistic if properly understood, we may point out certain facts, which exist, and which will exist, whether we like them or not. In the first place, capital is not going to come here for investment from Great Britain or any other part of the world, unless it is tolerably secure that it will not be legislated against, or find itself in antagonism with those by whom the law is administered. It may be very wrong of capitalists not to come and be killed when Labour invites them, but they are not patriots any more than the workers, and they are not, at all events, going to hop into the net when it is spread in sight of the bird. They are willing, as any financial journal shows, to go into very strange ventures, some of them very remarkable ones indeed, but they will not go where they believe there is no security for their investments. This is a most powerful reason why every endeavour should be made to sustain the credit of Australia, whereas, as our London letters show, we have succeeded in giving ourselves a very bad name already. This must militate against the free investment of capital, it has led already to the withdrawal of some, while there are grave complaints of insecurity of tenure under the mining laws. If our minerals, and not these only, but many things besides, are to be successfully worked and the country developed, we shall have to show that we are prepared to give both capital and skill their due, but if we are not, then we shall go without them, and must be content to go on in a small way. If Labour does not want capital, it can, of course, stew in its own juice; but if it wants our resources developed, which means a prosperous community, it must drop its absurdities and accept the facts.

Copy sent Gake 3/2/05 for

Copies sent Directors

BB

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b.J.

Luke Williams, F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
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First Class Certificated Mining Manager New Zealand Government.

Moonah, Hobart,
Tasmania, Jany 27th 1905

Messrs Knox Schlapp & Co
163 William St. Melbourne.

Dear Sirs

I have to acknowledge receipt of your letter of the 23rd inst and note contents.
I am greatly surprised to learn that the last two boxes of Samples from the Blue Tier Mines which I sent you had not reached you when you wrote.
I called at W. Holyman & Sons Office today in Hobart about the matter and they promised to write to both Launceston and St Helens (George's Bay) Offices about it & advise me thereon. I would suggest that you enquire at Wm Holyman & Sons Agents in Melbourne and ask them to find out what has become of the boxes. They are both Whiskey cases about the same size and fairly heavy, it is quite possible that the Customs Officers have detained them in Melbourne.—
Should I get any word from Holymans I will advise you. Re the queston No 1. "What may

be considered to be the average assay in tin of the Tin Rock taken as a whole in the workable places."

Without knowing the assay value of the samples which I took it is impossible for me to give anything like a reliable estimate of the value of the Tin Stone available for working. but I can give you the published returns of the 8 principal mines which have crushed Tin Stone, as follows:—

Mine	Tons	lbs of tin oxide per ton of stone.	Tin % oxide
Anchor	326757	5.14	0.2308
Australasian (portion only)	5000	14.93 Puzzle face	0.6666
		16.80 Down face	0.7500
Beales	4	11.2	0.5000
Cream Creek	4375	10.75	0.4800
Crystal Hill (estimated)	100	19.17 (estimated)	0.8560
Haleys	5037	14.5286	0.6486
Liberator	10284	9.7180	0.4338
Full Moon	2088	27.9014	1.2456
	353648	130.1680	5.8114
		14.4631	0.6457

0.6457% of Tin oxide assaying 73% Metallic Tin is worth with Tin at £130 per ton, equal to 12/- per ton of Stone. Though the tonnages are smaller in all the other mines than that of the Anchor I have taken them at the actual figures and results obtained as I have no other figures to calculate from. The tonnage from

the Australian and Cream Creek Mines are only a portion of that- which has been treated, but- these are all the figures that- I can obtain at present-. Those from the Crystal Hill are Mr Twelvetrees own Samples assayed by the Govt- Analyst-, and I was told that- 100 tons of Stone was crushed from the Mine.

(N°2) "About- how many tons of more than payable Tin Rock there may be estimated to excist-?" Without- Assays this question also cannot- be answered, but- I am safe in saying that- the quantity of Tin Stone of an equal grade to that- mined at- the Anchor 0·2308% (or 5·17 lbs) of tin oxide per ton of Stone is practically inexhaustible.

So far as can be seen of the bodies of Tinstone at- the various Mines, showing a vertical height- of 1830 feet- from the Anchor to the Outcrop on the Puzzle Hill, and with a proved width at- the Anchor faces of 16 chains = 1056 feet- I have no hesitation in saying that- these Mines will last- for Ages, but- to obtain its true value the Tinstone should be tested by Diamond drilling, when I believe much higher grade bodies of Tinstone will be found than has been yet- discovered, as Tinstone lives to great- depths, and everything points to permanancy at- the Blue Tier "Lodes", and to richer Stone below the Haley's and Full Moon Mines than has been found at- the Anchor. —

Yours Faithfully
Luke Williams

Silver Echo 170
Water Question.

Luke Williams. F.G.S. (London)

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
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"First-class Certificated Mining Manager New Zealand Government"

Moonah, Hobart. Tas.
Feby 20th 1905.

Messrs Knose Schlapp & Co
163 William Street. Melbourne.

Dear Sirs

I left Melbourne as promised on the 13th inst, arrived at Launceston next Morning and obtained Shipping Receipts for the two boxes of Samples, from Holyman & Sons, and posted them to you by the return mail that day. I had no time to write any letter with them as a train was leaving for St Marys, and I went on the same day (14th inst) to St Helens.

On the 15th inst I went up to the "Silver Echo" mine and made a careful examination of it. Report of same is herewith enclosed, and I could not recommend you to touch it at present.

I came on to Moonah on the 16th and have since been making enquiries (as arranged with Mr Schlapp) as to the likelihood of our being able to secure the Wheal Tasman, flat and other Sites for Reservoirs, &c &c.

On my return I received your letter of the 3rd inst and

Note Contents of same. Your letter of the 16th inst- enclosing draft N° 7889 for £250 on the Bank of Australasia, and your Cable of the 18th inst- have also arrived for which I thank you and note Contents.
I have had long and valuable interviews with the Minister of Mines and the Secretary for Mines on the Water question &c and the Minister promised to assist me in every way he could if I intended to introduce Capital to develope the Mines.
The Wheal Tasman Flat dam site has been reserved for public dam site since 1st July 1891, but the Minister (Mr C. L. Stewart) stated that he thought if any big Scheme was brought forward by me that he would be justified in throwing it open.
No other dam site on the Blue Tier is reserved.
Rent of dam sites is 5/- per acre per annum.
application fee for each dam site £1.0.0
Water Rights £1.0.0 per Sluice head per Annum.
Up-to-date Mineral Charts will be prepared for me by the Lands Department tomorrow, and forfeited Sections will be pegged without delay, and Options obtained on other Sections. I will probably go up myself to make sure the work is done correctly. Please address here & letters & wires will be sent on to me.
Herewith please find Copy of your Cable of the 18th & my reply of this date, and Report of "Silver Echo Mine".

I will send receipt for £250 when I get Duty Stamps to affix to it.
I not what you say Re not paying in Water Rights yet and will await orders, and advise you when Sections are secured, [illegible]

Copy of Cable sent to Mr R. Norfolk 163 William Street, Melbourne, by Luke Williams, 4eby 20th 1905.

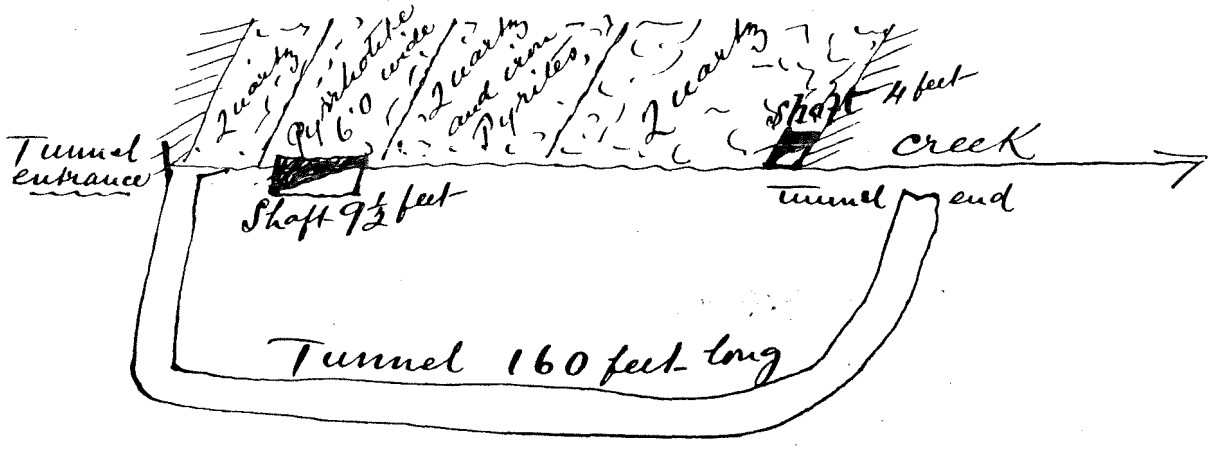
Waterglass - Have received your Cable of the 18th
foredeck - your instructions shall be carried out at once.
dictatrix - Do not escpect
linerod - Come over
balsamical - before I (we) can
partitive - Secure
parrhesia - Sections
Slowback - Writing you by to-day's post.
Williams - Luke Williams
Moonah. Hobart.

Copy of Cable received by Luke Williams from Mr R. Norfolk. 4eby 18th 1905. —

Rainbowed.	(To) take up
Ambler -	all
eaglewood -	forfeited
parrhesia -	Sections,
enfreed -	you must get
Mailstage -	personally
ii -	ii
responsive -	touch
with -	with
duff -	Mr 4. G. Duff
to -	to
partitive -	Secure
larvipara -	Option
limejuice -	over
his -	his
parrhesia -	Sections,
inseparate -	do not move in the matter
Selachian -	Water Rights
Melodist -	for the present.
dictature -	Do you expect
limerod -	come over.
Norfolk -	R. Norfolk 163 William St. Melbourne.

Notes on the "Silver Echo Mine" near St Helens. Tasmania.

Situate nearly 1½ miles inland from St Helens township and about ¾ miles in a Northerly direction from the Eastern Proprietary Mine at Scamander.
It has been taken up at different times for Tin, Gold and Silver. but no systematic work has been done on it.
The course of the Lode has not been accurately determined, but it appears to run about 20° East of North.
The Lode is exposed in a small creek which crosses it at nearly right angles.
It is a big formation of Quartz, White iron Pyrites and Pyrrhotite showing for about 40 feet wide though the full width has not been exposed.
The Country Rock is Slate and Sandstone similar to that in the Scamander Mines.
A peculiar shaped tunnel has been driven 160 feet thus



but no ore was cut in it, though it was driven across the line of Lode on the opposite side of the creek to where the Lode outcrops.
There is some Copper showing in the form of oxide near the Eastern Wall, and Copper Pyrites is seen through the Pyrrhotite, a sample of which I took for assay if required.
After carefully looking into the "Echo Mine" I cannot recommend it to you, it is only a prospecting show, and one that offers very little encouragement for Capital at the present time.
In 1897 Mr Harcourt-Smith (Govt Geologist) inspected the "Silver Echo Mine" and took Samples of Pyrrhotite which gave traces of Gold and Silver and 0·1 per cent Copper and a vein about a foot wide of iron Pyrites containing a little Copper gave traces of Gold & Silver and 0·3 per cent of Copper. —
On 2nd April 1901. The Assistant Govt Geologist inspected the Mine and was told that some of the white iron Pyrites gave up to 15 dwts of gold per ton. He summed the "Mine up thus . . . From a Geological point of "view it would be very interesting to see the deposit "opened up, but as a Mining Venture I can "only say that it would be purely Speculative.
In August 1901. The present Government Geologist Mr W. H. Twelvetrees, inspected the "Silver Echo

Mine" and reported thus. "The Silver Echo Mine near
"St Helens has been recently reported upon by Mr
"G. A. Waller, Assistant-Government-Geologist, and
"it is unnecessary for me to do more than confirm
"his account generally, I am afraid that at present
"it is more interesting geologically than important
"from an economical point of view. . . Though
"Tin might reasonably be expected to be present,
"it has not been found yet, and there is hardly
"any inducement to expend much in opening it
"up. —

The Mine is situate about 350 feet above sea level, and the hills rise about 400 feet above where the lode is exposed in the creek, a good road runs within a mile of the Mine to St Helens and there is good Mining timber close to the Mine,

A great deal of prospecting will require to be done before this Mine can be recommended for the expenditure of Capital, and I am borne out in my opinion by the Government-Geologists.

Luke Williams
Moonah, Hobart—
4 feby 20th 1905

Water Scheme

Luke Williams. F.G.S. (London) 177

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
CERTIFIED ASSAYER; TASMANIAN GOVERNMENT, LABORATORIES.
MEMBER OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE NORTH OF ENGLAND INSTITUTE OF MINING & MECHANICAL ENGINEERS.
MEMBER OF THE AUSTRALASIAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.

2/3/05

"First Class Certificated Mining Manager New Zealand Government"

Moonah. Hobart. Tasmania.
Feby 22nd 1905

Messrs Kruse Schlapp & Co
163 William Street. Melbourne.

Dear Sirs

Since writing you on the 20th inst. I have had another long interview with Mr C. L. Stewart, State Treasurer and Minister of Mines for Tasmania, on the Blue Tier Mines question.
Mr Stewart holds two 20 acre blocks (formerly Beale's Sections). Mr Stewart has partners in the blocks but says he would be willing to place them under offer to me, if I can give him any idea of the size of the Co or the number of other Sections to be included.
He wanted me to suggest a value for his Sections which at present I could not do until conferring with you, he prefers Shares instead of Cash.
Yesterday I arranged with a Man to go up & peg the Sections required, he has been all over the Blue Tier & knows the place well, he will arrive there early tomorrow morning and quietly peg the ground. I intend going

to Launceston on Friday to see about Maddox's Sections, and on to Lottah on Saturday to get the Option over the Haley's Lease, and make sure that the forfeited Sections are secured.

Maddox's Sections are owned by Mr Frank Maddox of Orrong Road, Elsternwick, Victoria. I will find out how to approach him, from his brother Dr Maddox of Launceston.

Do you wish me to come over to Melbourne to get in touch with Mr T. G. Duff and any other interested persons so soon as I have the Haley's Option and the Sections pegged?

I feel sure that we will have the sympathy and influence of the Minister of Mines here in the proposed Water Scheme.

Please address everything to Moonah and it will be sent on to me wherever I am.

When everything is completed at the Blue Peer (about the middle of next week) I will wire to you for further instructions.

Receipt for £250 is enclosed herewith.

Yours faithfully
Luke Williams.

Answ

Pioneer Tin Mine

Luke Williams. F.G.S. (London) 179

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
CERTIFIED ASSAYER; TASMANIAN GOVERNMENT, LABORATORIES.
MEMBER OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.
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MEMBER OF THE AUSTRALASIAN INSTITUTE OF MINING ENGINEERS.
MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.
First-class Certificated Mining Manager New Zealand Government

2/3/05

Metropole, Launceston.
4eby 24th 1905

Messrs Knox Schlapp & Co
163 William Street, Melbourne.

Dear Sirs

I received your Cable last night and sent reply this morning as per Copies enclosed herewith. I came to Launceston this morning & find that Dr Maddox is in Victoria with his brother (Mr Frank Maddox) who holds the Ethel & Ida Crowther Sections at Blue Tier. His address is now "Uralla", Lewisham Road, Windsor, Victoria.

I will reach Lottah, tomorrow evening & hope to complete everything in hand there in 2 or 3 days. and will wire you when ready to leave. Gladstone is only about 12 miles from Moorina, & I must pass that way on my return, so that I can reach it without delay and at the minimum of cost. a letter posted by you on the "Longana" on Monday addressed to me at Lottah will reach me either

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by the morning or evening Mail next Wednesday, so that full instructions sent then would be in time to enable me to reach Gladstone on next Thursday evening.

As soon as I know what has been done in regard to pegging the Blue Tier Sections I will wire you particulars.

Yours Faithfully
Luke Williams

P.S. I notice that for Half yeard ending 31st Dec last the Pioneer Tin Mines Cost had increased from 6·438 pence to 11·006 pence per cubic yard, the Tin Contents had increased from 2.03 lbs to 3·105 lbs of Stream tin per cubic yard, the average recovery of Stream tin from the whole of the ground worked by the present Co having been only 2·41 lbs per Cubic yard.

The cost of raising the tin had increased from £29.596 to £32·141 per ton of Stream tin.

The January average of the 19100 cubic yards of drift treated at the Briseis Mine was 5·101 lbs of tin per Cubic yard.

Mr Sternberg M.L.C. of Victoria recently visited the "Silver Echo Mine," near St Helens. I was told that he was favorably impressed?

L.W.

Copy of Cable Received by Luke Williams from Mr K. Norfolk, 4feby 23rd 1905.

4footiron – Can you go to inspect and Report on
Repandous – 4July
Minoress – property
Gladstone – (at) Gladstone, (4Jas)
Sensuously – early next week
4foxtraps – without interfering with
Knapweed – at present occupied in
Reply – Reply
Norfolk – Mr K. Norfolk –

Copy of Reply sent by Luke Williams 4feby 24th 1905

4footjaw – Can inspect and Report on property
Gladstone – (at) Gladstone, 4Jas.
Sentry – about the middle of the week
Reapproach – will telegraph again
4fordable – Telegraph instructions direct to
Lottah – Lottah
Williams – Luke Williams.

Luke Williams
4feby 24th 1905

A. Luke Williams. F.G.S. (London)

CABLE ADDRESS: "MINERALS," HOBART.

FIRST CLASS CERTIFICATED MINING MANAGER; TASMANIAN GOVERNMENT
FIRST CLASS CERTIFICATED MINING MANAGER, THE CHAMBER OF MINES OF VICTORIA, MELBOURNE, AUSTRALIA.
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MEMBER OF THE FEDERATED INSTITUTION OF MINING ENGINEERS, ENGLAND.
FIRST CLASS CERTIFICATED MINING MANAGER; NEW ZEALAND GOVERNMENT.

Mr A

Moonah Tasmania
Decr 18th 1905

Alfred Mellor Esq
Secy Mt Lyell Mng & Rly Co Ltd
39 Queen Street. Melbourne.

Dear Sir

Since writing you on the 15th inst I have rec'd your Cable of the 16th inst, and I cabled you on the 16th and again today as per Copies herewith. No 1 Dam Site. The Cabinet met on the 16th inst (Saturday) and spent over an hour on the matter, I saw the Minister of Mines afterwards and he said nothing would be known made known until Monday but in the meantime I need not look glum. He said there were one or Two points that they wished to give a little more consideration to on Monday. Today the Cabinet dealt finally with Duff's application and mine. Duff's application was refused and mine was considered Satisfactory and will now be dealt with in the ordinary course.

It is some satisfaction to know that we have beaten

Duff

Decr 18th 1905 (2) Alf Mellor Esq.

I heard unofficially that Duff wrote stating he had not received proper notice of what was required as to the Scheme and asking for further information but the Ministers dealt very summarily with him today as they consider that he has been the cause of all the Blue Tier trouble.

Letter from Secty for Mines. This afternoon the Secty for Mines handed me the enclosed letter of this date, "The Minister is satisfied with my Scheme for the development of the Blue Tier, and my application will therefore proceed in the usual way."

I am not replying to this letter unless you wish it; We have the right to impose conditions as to what we will accept if we undertake to spend £140,000. and these conditions were named as necessary to our Scheme which the Premier asked me to put in writing. This reply is simply a red tape departmental one from the Secretary for Mines.

Mr Wallace told me today that they would grant us a Lease for the dam site for 21 years, but a time limit will be fixed for the expenditure of the £10.000 for prospecting purposes, he could not say how long this time limit would be, without consulting Ministers on it, and he says I may be asked to state what time we desired.

I would suggest that we undertake to spend

£2,000 a year for 5 years in prospecting, that will give us that-period to spend the £10.000 and by spending that-sum we will claim the right- to the N°1 Dam site for 5 years hence, Though we hope to push on the work vigorously and spend the £10.000 in a year or 1½ year I don't- think we should bind ourselves with the Government- to do it- in less than (say) 5 years, if they will accept that-period, and I think it- is worth trying, especially as it will give us that-period to construct- the Dam and determine what the future scheme will be and as to whether the £160.000 will require to be found.
Kindly advise me if I shall try for a (5) five years option, in which to spend the £10.000?
N°2 Dam Site. This will be granted to us when we surrender the leases held by Houston and Direen & Parby to the Mines Department. I don't- think we need to rush this matter until the N°1 site is granted as the rent- is not- going on in the meantime, and being surveyed and charted in my name, no one else can apply for it-.
I have told the Minister for Mines and the Secretary that- we have bought- all Houston's Rights and have Direen & Ogilvie's under 12 months Option.

Decr 18th 1905 (4) A.J. Mellor Esq

The Minister desires to see the new Co include all the interests on the Blue Tier, he knows from our letters that they are included, the Australian Mine being on the Southern Slope is not interested in the Wynyford River water.

New Co. I think a suitable name for the new Co would be "The Blue Tier Tin Mines Limited"

Surveys. The Surveyor will I understand be instructed to survey the No 1 Dam site without delay. Do you wish Mr Fraser to make calculations of its capacity and area similar to No 2 Dam?

Gauge. I think we should arrange early in the new year to gauge the water flowing through the Wynyford River at No 2 Dam site daily so as to have reliable data as to the available water.

Rent Water Rights &c. If the Scheme is a payable one these Rights are cheap at £1250 as 10 heads of water is nearly equal to 500 horse power.—

I am writing Mr Wallace to know when we may expect the survey of No 1 Dam site to be completed by the Department.

Sulphide ore. Your Cable just to hand stating £200 was sent to Bank of Australasia Hobart today for which I thank you, Mr Moyle hopes to have the ore ready to send on this week, he is branding it with a Red R 1 some of the bags having been branded before he

Decr 18th 1905 3 alf Heller Esq

received my letter how to brand them.
There was no letter from you today, but as some of the last Melbourne mail was left behind on Saturday it may arrive tomorrow if on the way.
Will you kindly advise me how I am to forward the ore from Williamsford as per my letter of the 6th inst? is it to be via Burnie or Strahan and is it to be shipped to an Agent in Melbourne.
If you wished to save the freight to Melbourne & back I could arrange for Mr Moyle to send it to himself at Strahan and then to Mr Lyell afterwards, as he sends his Ring Valley ore to Lyell I think he could arrange to get this lot through without any trouble or suspicion. please advise me what to do as the ore will be ready by the end of this week.
Herewith enclosed please find Copies of your Cables to me of the 16th & 18th inst and mine to you of the same date, also Mr W. H. Wallace's letter to me of this date, perhaps you had better keep this original as I have taken a copy of it.

Yours faithfully
Luke Williams

P.S. Lottah people are getting anxious over the delay in granting the dam site and offer to call a public meeting for the 20th inst, but I will keep them quiet.
L. W.

P.S. Today's Mercury says 100 tons sulphide from Mount Read Blue is being sent to England. They have no suspicion of mine, it is a mis. L. W.

Copy of Cable Alfred Mellor to Lewis Williams Dec 16th 1905

Bechawk — Have bought
Kent — Kent
Selachian — Water-rights
glumpy — Leases
Successful — £1250
Mellor — Mf Mellor. Melbourne Dec 16th 1905.

To Quarlem. Melbourne
Fluorated — This is for your private information only
fluted — have been informed by
Zoologer — Minister for Mines
Clockwork — decision in our favour
Labelled — the official notification
healthless — cannot be made here
Saleroom — until
incull — next Monday (18th Nov)
Williams — Lewis Williams. Hobart
Dec 16th 1905

Copy of Cable to "Quartern" Melbourne from Luke Williams, Hobart-, December 18th 1905.

Waterjox — Have received your Cable of the 16th
gracilent — Have received a letter from
rogoitred — Secretary for Mines
Skating — Skating
Zoologer — Minister for Mines
Palindament — is Satisfied with
Scheme — Scheme,
aphthong — Application
Dansite — for No 1 Dam Site
acicularly — is accepted.
Duff's — T. G. Duff's
aphthong — Application
nomadism — has been refused.
Slowback — writing you by todays post.
Williams — Luke Williams Hobart-
Decr 18th 1905

Copy of Cable from Alfred Mellor to Luke Williams Dec 18th 1906

Wallopped — Refer to your letter of the 6th
Obbligato — Have remitted by Cable this day
Suborbital — £200
Chalkpit — to your credit-
Woodchoir — Bank of Australasia
Hobart — (at-) Hobart-
Mellor — Alfred Mellor, Melbourne Decr 18th 1905