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STANLEY RIVER TIN

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A large scale production project can not be developed on the alluvial tin deposits at the Stanley River.

The area of unworked alluvial ground remaining is 187½ acres and assuming an average depth of 3 yards the potential yardage is 2,723,000 cubic yards. It is extremely unlikely that detailed investigations could prove more than 4,000,000 and it may prove as low as 2,000,000 cubic yards.

Further, some testing of the wash has shown disappointing results but it must be emphasised that the testing is unsystematic and inconclusive. Of the 26 dishings from which the concentrate was weighed, 11 gave poorer results than would be anticipated and only 4 washings gave values significantly better than expected.

The alluvials provide insufficient reserve to be worked economically as a large scale project but it may be possible to work an appropriately scaled smaller undertaking on a sound basis.

It is recommended that further investigation, if any, should be in the nature of an exploration party to more accurately assess the values and depth of the ground.

INTRODUCTION

Topography

The tin bearing alluvial flats on the Stanley River are due to a flattening in the erosional curve of the main stream profile which has given the tributaries, Livingstone Creek and Castle Creek an opportunity to adopt a more mature profile.

The whole area on the valley floors, adjacent to the alluvials, falls very gently and the temporarily slow flowing streams would give opportunity for settling ponds for tailings. Some difficulty has been experienced in obtaining sufficient fall in sluicing to get the wash to run to the elevators.

Livingstone Creek, as it runs on to the main alluvial flat, spreads into numerous channels and distributaries.

For the most part the topography is young. Mount Livingstone dominates the steeply rising foot hills at the western end of the plain while Mount Lindsay and the spurs leading up to the Parsons Hood rise from the east. It is round one of these spurs that the water race carrying water from the upper Stanley River to the head of the pipeline, 300 feet above the main flat, has been built. This race could be reopened at little cost but provides only an intermittent full supply since there is no storage above the intake and the Stanley River rises and falls very rapidly in response to rainfall.

There is adequate total water for any hydraulic undertaking but the minimum river flow is very small and is reached after two or three days without rain.

Climate.

At Zeehan it rains, on an average, 217 days in a year and over the last few years the average is for 116 of these wet days to record more than 25 points. The Stanley River area has a similar relation to the coastline and surrounding mountains. Its rainfall would probably be similar.

Vegetation.

The vegetation on the alluvial areas is distributed as follows:-

	<u>Main Flat</u>	<u>Top Flat & Castle Creek</u>
Open Button Grass Area	95.1 acres	42.3 acres
Tree Covered Area	34.5 acres	14.0 acres

The worked out area is a dense regrowth of ti-tree swamp, 24.1 acres. No distinction is made between the dense ti-tree, gum, fringing areas to the button grass and the thick tangled horizontal myrtle etc. of the primary forest. Both would be equally difficult to clear for mining purposes. Many Huon Pine trees occur in the primary forest.

Transport.

The way to the Stanley River from the south is barred by the Pieman Gorge. The best route seems to be that directly from Zeehan. By jeep track about 5 miles from the Corinna road and across the Pieman River by cage. The foot track from the river rises steeply out of the gorge and follows well drained open dividing spurs to the valley of Cruncher Creek about $\frac{3}{4}$ mile from the alluvial flat. The descent and ascent at the Pieman and parts of the descent from the Pincher to Cruncher Creek are unsuitable for a jeep track. It is about 9 miles long.

The route from Renison Bell via the old suspension bridge and the Wilson River Valley is mainly through primary forest. It is 16 miles long and is unsuitable for a jeep route.

The route from Lucy Landing has been suggested as an alternative to the track from Zeehan. It is somewhat longer, about 12 miles, and about half of it is through heavy forest country.

As an alternative to carrying heavy earth-moving equipment across the Pieman, it may be possible to find a location where the river could be forded at mid summer level.

There is no track from the hut at the lower Stanley River flat to the upper alluvial areas and the scrub near Castle Creek is almost impenetrable.

GENERAL GEOLOGY

The larger alluvial area is bounded by three different rock types. The harder quartzites and slates of the Precambrian Carbine group form a resistant barrier onto which the Stanley River crosses from the more readily eroded granite. The accumulation of sediment behind this "barrier" has allowed the tributary

streams to reach base level and form the alluvial flats. A possible contributory factor in formation of the main flat may be rapid reduction of the dolomite to local base level as is found in most limestone areas on the West Coast.

The dolomite is exposed on the floor of the old workings. It is possibly a member of the Carbine group but some outcrops in the Stanley River show secondary dolomitisation.

To the east and along the track to Mount Lindsay are the slates of the Mid Cambrian Dundas Group. Occasional tuffaceous beds are found but the development of the pyroclastics does not compare with areas further east.

The massive Devonian Meridith Granite bounds the main flat to the north and underlies the whole of the remaining alluvials. From it the tin appears to be shedding.

ALLUVIALS.

The alluvial area is 211.6 acres. Of this 137.5 acres remain unworked, 129.4 acres on the larger flat and 58.3 acres in the Castle Creek and up river area. The areas are distributed as shown on the map and to adequately cover them with a single square for exploration would require an area of 2,500 acres. Five 80 acre, two 20 acre and five 10 acre leases, totalling 490 acres, could be arranged to cover the area of alluvials for mining purposes.

Sections are submitted showing the wash, its nature, depth and tin values in ozs/cubic yard of 70% concentrate for the various localities which are indicated by numbers on the map.

The depth has not been properly ascertained. Only four of the sections bottomed on bedrock at $6\frac{1}{2}$ to $7\frac{1}{2}$ feet. A pit towards the centre of the larger plain (location 7) was sunk to $10\frac{1}{2}$ feet and was still in coarse wash when it had to be abandoned because of trouble with ground water.

Not far from this pit is a former creek terrace rising almost 15 feet above the pit surface level. It is possible that depths from 20 to 30 feet may be found near the centre of the larger plain.

The earlier workings have been in ground 6 to 7 feet deep, bottoming mainly on a black clayey pyritic pug which occurs over the dolomite. For most of the area the probable depths would be 9 to 10 feet of wash.

This would give a potential of 2,723,000 cubic yards, of which 940,000 cubic yards would be under the forest floor. Clearing vegetation would appreciably add to production costs and seriously hamper a detailed investigation.

The ground water is at surface level on the open plains and 1 to $1\frac{1}{2}$ feet below surface in the forest. It runs freely into test pits and also hinders investigation. It would be difficult to drain a working paddock although both areas have some slope.

The distribution of tin is very irregular. The wash is mainly very coarse with lenses of sands and gravels occurring to a lesser extent, distributed at various levels but mostly on top of the coarse material. The coarse wash is pebbly material, rounded boulders of quartzite and quartz tourmaline up to 1 ft. diameter but mainly 2 to 3 inches with finer rounded gravels and sands in the interstices.

The coarse wash probably accumulated relatively quickly and the tin values would be expected at its base rather than distributed through it. This is shown by the sections but a good tin value is not always obtainable.

The best values recorded of 4 lbs. to the cubic yard were from a sand and gravelly wash which extends right down to the pug. The value appears to be higher and more evenly distributed in the finer material but the occurrence of the finer wash is quite irregular.

No clay bands were noted above the floor of the wash but a band of lignite was seen on one of the upper flat sections. A clayey pug and dolomite form the base of the wash over most of the south-eastern end of the main flat. The remainder of the alluvial wash rests on weathered granite.

The dolomite and pug bottom may be somewhat irregular but no steep bottom slopes would be expected elsewhere. However, there is insufficient data to determine this.

Also the testing is not very conclusive. Samples were taken mainly from exposed parts of the old working face, river banks, etc. In only a few places was the bottom reached. The material was measured in a panning dish and washed by hand, giving an unclean concentrate which was bagged and submitted for weighing. The tin content has been calculated in ozs/cubic yard of 70% concentrate and values are listed by the relative sections and depths.

Monazite forms an appreciable portion of the concentrate. Determinations of this mineral are pending but it will have to be separated from the tin concentrate. The washed concentrates showed a radio activity of five times cosmic background when tested with a counter. Apparently this is due to thoria.

LODES

There are two large ferruginous outcrops on the edge of the lower alluvial flat. They occur at the margin of the granite. The upper outcrop is of weathered hematitic material while the gossan nearer the hut contains also secondary pyrite.

Both have been well tested for tin near the surface apparently with only slight success.

There is one test pit on the upper outcrop but the lower one is tested with many shafts, adits, costeans etc. and there has been a little production from open stopes.

Some samples of the gossanous rock are being tested for tin.

Department of Mines,
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