RENISON MINES NO LIABILITY
NORTH DUNDAS, WEST COAST, TASMANIA.

The mining tenements, comprising the area acquired by this Company include Mineral Leases Nos. 10987/M - 60 Ac., 10843/M - 43 Ac., and 10970/M - 82 Ac., with adequate Water Rights appurtenant thereto.

It is not necessary in this brief Statement to refer to the physiography or the geographical position of the field. These are described in detail in Geological Survey Bulletin No. 36 issued by the Department in 1916.

The geological features of the district are fully dealt with as well as the physical and mineralogical characteristics of the ore bodies.

Since the Bulletin referred to was issued, many changes in the industrial world have occurred, and considerable progress has been made in metallurgical science.

The mining properties described have remained as they were, no attempt has been made to exploit the ore deposits.

Many years ago, as recorded in the publication referred to, attempts on a very limited scale were made to treat the pyritic ore for the recovery of tin oxide. This experiment was not altogether a failure, although economically, for various reasons, they were not successful and were discontinued.

They demonstrated that the pyritic ore was amenable to treatment by concentration, calcination and reconcentration of the calcined residue for the recovery of a high grade tin oxide product.

The deposits are very extensive, the quantity of ore available cannot however be estimated by the ordinary recognised methods.

To describe in detail the extent and characteristics of these ores would be little more than a repetition of what is stated in the Departmental publication referred to.

The three leases comprising the holdings of the Renison Associated Tin Mines, No Liability, are separated by other leased areas on the field containing similar deposits of ore.

Each of the three in the past has been exploited for the recovery of tin oxide chiefly from oxidised and detrital deposits.

On section 10970/M formerly known as the Renison Bell Mine area, a 20 head stamper battery is erected with necessary fine grinding and concentrating appliances. This mill, when in commission, was operated by a hydro-electric plant erected adjacent thereto. Water for power and milling purposes was obtained from the Argent River; half a mile of race channel designed to carry fourteen cusecs. gave up to 100 BH power. The river for most of the year carries many times the volume used for power.

The plant originally consisted of five head of stampers, and was erected to treat oxidised (free milling) ore. It was put into commission in 1909, the output being maintained at the rate of four (4) tons of tin oxide weekly for a year or more. The concentrated tin oxide contained on the average 68% metallic tin. About a year or more later a second unit of 5 head of stampers was added and productive work continued until 1913. During this period approximately one thousand tons of tin oxide, averaging 68 per cent metallic tin, was recovered. Operations at the time were highly profitable. The price of tin was then in the vicinity of £180 per ton.

The treatment of the deposits of oxidised ore gradually declined owing to depletion of resources of that class of ore.

At that time the plant was duplicated for the purpose of dealing with pyritic ore. The attempt was little more than an experiment, the writer being then, and for several years previously, in charge of operations.

The attempted treatment of pyritic ore as above described was of short duration chiefly owing to the outbreak of war in 1914. The Company was unable to command the necessary capital to provide complete plant for the purpose and persevere with the development of the pyritic ore bodies, consequently with the drop in the market for tin, and the economic position generally, the field gradually lapsed into inactivity.

With the recovery of the tin market to its present high level, attention is again directed to the exploitation of these deposits.

The work carried out by other companies at the time referred to on leases 10843/M and 10987/M, was on similar lines to that described in section 10970/M. Approximately a similar quantity of tin oxide was raised from these sections. Altogether the quantity of tin recovered from the treatment of oxidised ores on the field has not been inconsiderable. It was obtained from the shallow oxidised cappings of the pyritic ore in the form of gossan and/or from the shallow detrital deposits lying on the hill sides as shed from the loder.

It has long been realised that the continuity of operations on the field would depend upon the successful treatment of the primary (pyritic ore) ore bodies. It is now claimed by those interested in the development of the field that this can be successfully accomplished by flotation processes.

It is not definitely known to the writer if such treatment has been successfully applied, but further experimental work thereon appears to be essential before it can be established that the ore without selection is amenable thereto.

The tin oxide is not regularly distributed through these ore bodies. Certain zones carry sufficient quantity to render the ore payable for treatment by flotation methods providing it can be successfully established.

SULPHUR: The object of these brief observations is not solely for the purpose of drawing attention to its possibilities as a potential source of tin oxide, but to refer particularly to the value of the sulphur content of the ore bodies.

The primary ore of the field consists of pyrrhotite (magnetic pyrites) of which very considerable portions thereof contain little or no tin ore. In exploiting the ore bodies for the tin bearing portions thereof, more or less of the non-tin bearing material would have to be removed.

The increasing demand for sulphur for the manufacture of fertilisers and other industrial purposes - such as the rubber industry - made it imperative for manufacturers to import brimstone sulphur from foreign countries. Formerly pyritic ore was used almost exclusively for the production of the super phosphate requirements of the Commonwealth, now, however, importations from America are considerable, and are increasing each year.

Although there is no known instance of the manufacture of brimstone sulphur from pyrites in Australia it is being successfully carried on in Norway from Sulphide ores. During the past few years a plant has been erected there which is now producing 70,000 tons annually of the purest quality sulphur. More recently a Spanish patent for the same purpose has been published.

A great deal of research work is being concentrated on this problem the world over, consequently large pyritic ore bodies which can be mined cheaply, such as occur at Renison Bell district, are potentially a valuable asset.

The average Sulphur content of the crude pyrrhotite is approximately 36 per cent. The concentrate produced would average 40 per cent. The Commonwealth Government gives a bonus of 32s. per ton on Sulphur produced within the States.

The ore, in addition to sulphur, is capable of yielding a particularly high grade iron - electrolytically produced. This class of iron has special properties and is coming into general use for special purposes. The question of utilising these deposits commercially for the production of these products is worthy of close investigation.

PIGMENT OXIDE: The residual product from the desulphurised ore under controlled conditions yields a valuable iron oxide pigment of the highest grade. The demand for this material is fairly general in the Commonwealth. All the highest grade material is imported and retailed at high prices per ton.

If properly prepared, the oxide produced from the Renison Bell ore is equal to the best imported article which commands a very high figure when retailed.

From the foregoing it will be concluded that these extensive ore deposits have very promising commercial possibilities. The quantity of tin already produced under most adverse conditions speaks for itself.

With the utilization of the other products mentioned there is every prospect of establishing a highly payable industry for the manufacture of these commodities in addition to the recovery of tin.

POWER: Within a comparatively short distance the State Hydro-electric power transmission lines pass the field. In the near future, through the extension of the Government power scheme now in progress, abundant electric power will be available at a cheap rate.

These notes should be read in conjunction with Geological Survey Bulletin No. 26 which contains much information concerning the field, not referred to here.

Mines Office,
HOBART, TASMANIA.
6th February, 1935.

(signed) J.B. Scott M.A.I.M.M.
SECRETARY FOR MINES.