

REPORT ON TIN LODES AT UPPER NATONE (HOUSETOP).

LOCATION & ACCESS: Upper Natone is situated to the south of Burnie from which it is distant 16 miles by road. The latter passes through Upper Natone and continues west-south westerly for a distance of 4 miles to Hampshire Station, on Emu Bay Railway. Housetop tin-field occurs in the south-western part of the district.

INTRODUCTION: Although alluvial tin had been worked in the Housetop area prior to 1891 it was not until that year that tin was discovered in what afterwards became known as the Kaolin lode. Subsequently this was worked on a small scale and treated in a primitive manner for its tin content.

Two years ago L.J. Clark disclosed other tin ore channels in the same vicinity and since then has attempted to prove the value and extent of the occurrences by shallow prospecting work.

GEOLOGY: The basement rocks of the district consist of medium to coarse grained biotite granite of Devonian age. Variations occur in some localities and in the vicinity of the tin lodes the rocks are fine grained aplite types consisting of pink feldspars and quartz blebs with subordinate amounts of dark mica. In the valleys weathering agencies have bleached the feldspars and the aplites there occur in a general softened state. To the north, east and west of the lodes granite is overlain by flows of Tertiary basalt.

TIN LODES: Tin lodes occur on Crown land in the eastern portion of old mineral section No. 5182/M and extend to the north-east outside the section. They are covered by lease application No. 11675/M of 80 acres in the name of L.J. Clark.

The ore channels are generally irregular and poorly defined and are contained in soft white aplite. They consist of oxidised quartz veinlets and bands of white kaolinised feldspar. Cassiterite (tin oxide) is not confined to the quartz veins alone but is also distributed unevenly through the surrounding kaolin and soft aplite. It usually occurs in an extremely fine state of division in association with magnetite and tourmaline, but medium to coarse particles are present in some of the quartz veinlets.

Four ore channels have been located in a north-north-easterly zone, approximately two chains in width, over a length of 20 chains. It is possible that either of the channels may junction with another along the lines of probable extension, but this has yet to be tested.

CLARKE LODGE: This is the most easterly occurrence and is cut in shallow shafts, trenches and a shallow prospecting adit at intervals, over a distance of 12 chains, along a general strike of 22° . Width of ore channel varies at the different exposures from 3 feet 4 ins. to 6 feet.

In prospecting adit, driven from Tas Creek level, a band of soft kaolin and aplite, traversed over a width of 18 inches by oxidised veinlets dipping at 80° to the north, was cut at 15 feet from the mouth.

At 27 feet in adit Clarke lode was intersected and driven on for 20 feet to the south-south-west. A short cross-cut to south-east from drive failed to locate southern extension

of first lode cut in adit. In end of drive the lode extends over a width of 4 feet 6 inches in a vertical ore channel consisting of a central soft kaolin band showing a distribution of very fine grained tin oxide. Remainder of lode is made up of aplite and oxidised siliceous veins.

At 26 feet north of adit Clarke lode is again exposed in the more westerly of two shallow shafts in the form of several small leaders in aplite, over a width of three feet 4 inches. A small leader also occurs in the eastern shaft and may be connected with the formation first exposed in adit.

In a deep trench six chains to south-south-west of adit the lode is disclosed over a width of 6 feet and represented by a number of small quartz leaders in soft aplite.

NORTH LODGE: Near north-east corner of Section 5182/M a prospecting adit driven westerly for 47 feet passed through six feet 7 inches of poorly defined oxidised aplite formation at adit mouth.

Two south-westerly drives commencing at 8 feet in adit followed small oxidised leaders but failed to disclose any continuation of the large formation.

At 30 feet north of adit small leaders, said to contain traces of tin oxide, are exposed in shallow shafts. These may be connected with the adit formation but the latter appears to trend further east and may junction with Clarke lode in that direction, if continuous.

KAOLIN LODGE: This lode was worked to a small extent many years ago by southerly drives from a 40 feet vertical shaft. Later, mining was continued by means of a short drive from a high level adit situated 26 feet to the south of old shaft. These old workings are now caved in and inaccessible.

Recent works have exposed the lode, in approach cuttings of two prospecting adits, situated 20 feet and 66 feet respectively north-north-east of old shaft.

The lode is there divided into two ill defined channels with several feet of non productive aplite between. West channel appears to extend over a maximum width of 3 feet and the eastern channel is approximately 4 feet 9 inches wide. In the channels almost vertical bands of soft kaolin occur, succeeded on either side by iron oxide stained aplite and traversed by small siliceous veinlets. In northern exposure of west channel a hard quartz greisen vein, 6 inches in width, takes the place of kaolin band elsewhere.

Mining and prospecting works have proved the Kaolin lode to extend along a north-north-east south-south-west course over a distance of 120 feet. It has not been traced south of old workings. Northern prospecting adit, driven north-north-easterly with short cross-cuts on either side, failed to disclose the characteristic kaolin band of east channel, but only exposed minute leaders in east cross-cuts. West channel passes out of adit to the north, underfoot, at 10 feet from mouth and has not been traced further in that direction.

SOUTH LODGE: In the head of a small creek at $5\frac{1}{2}$ chains to

the south of Kaolin lode workings a lode channel is exposed in a cut over a length of 41 feet. Width of channel is 3 feet and strike of lode 14° west of north. It consists of several minute quartz veins and hard iron stained bands in soft aplite.

The mapping indicates that South lode is either a southerly discontinuation of Kaolin lode on a slightly different strike, or else a branch from the latter if it continues that far south from old workings.

SAMPLING: During the examination representative samples were taken from across the lode channels wherever conditions were favourable; and the positions of these are indicated on the accompanying plan by sample numbers. Of these five were taken from Clark Lode, two from Kaolin Lode and one each from North and South Lodes. The samples were forwarded to the Government Chemist & Assayer for treatment and he reports the following assay results for tin:-

Registered Number	Sample Number on Plan	Per Cent	Lode
911	2	0.08	Clark Lode
912	3	0.95	
913	4	0.08	
914	5	0.02	
916	7	0.42	
910	1	0.15	South Lode
915	6	0.37	North Lode
917	8	0.04	Kaolin Lode
918	9	0.43	

CONCLUSION: Four irregular lode channels containing an erratic distribution of extremely fine grained tin oxide have been exposed near surface in prospecting and mining works. Clark Lode is the only one, so far, that has been proved to have continuity in length and width.

Assay results of nine representative samples indicate that the average tin content of the ore is low.

The tin oxide is chiefly in such a fine state of division that it would be necessary to prove a large body of high grade ore to allow for a big percentage of loss in any scheme of treatment.

In any future exploratory work it would be advisable to concentrate on Clark Lode to endeavour to prove a payable ore shoot of suitable size for mining.

This work could be accomplished by means of a north-north-easterly drive on the lode by way of a prospecting adit commencing from creek level about one chain south-east of No. 7 Sample trench. From assay samples taken at every 10 feet in the drive average values could be computed.