REPORT ON THE WASHINGTON SILVER LEAD MINE - MOINA

MIDDLESEX DISTRICT

Location and Access

The leases of the Washington Silver-Lead Mining Company No Liability comprising 113 acres are situated on the Wilmot River in the Middlesex Mineral District.

Access to the mine is by road from Roland the terminus of the Government Branch Railway from Railton Junction on the Main Western Line.

From Devonport to Roland by railway is 29½ miles and from Roland to Moina, via Wilmot, 17 miles. The Mine is reached by a branch road of one mile from the Main Road. Wilmot to Moina, the turn off is 9 miles from the former. The branch road to the mine is of recent construction and is not metalled: in its present condition would not be passable for heavy traffic in the wet season. Short sections of it have been corded with wood slabs.

The Washington S.L. Company commenced operations on the property some four years ago and since that time have carried on a continuous scheme of developmental work. No actual productive work has so far been carried out. In the developmental operations 5 tons of fair grade galena has been taken out and shipped for treatment. Preparations are now in hand for the erection of a concentrating plant-power to drive it is to be generated by a water motor under a head pressure 350 feet.

Topography

The area embraced in the leases is part of the extensive table land of the District which at this point has an elevation of 1500 to 2000 feet above sea level.

In the vicinity of the Mine workings the area is deeply dissected by the valley of the Wilmot River, a tributary of the Forth which flows in a northeasterly direction to a point near to the lode outcrops thence takes a more northerly course for some distance being roughly parallel to the strike of the ore bodies.

The sides of the valley are steeply inclined particularly on the eastern side, which, in places is precipitous.

The Wilmot River is a rapid flowing stream with a channel of a chain or more in width, the banks rising abruptly from its bed. The general topographical features of the locality are, however, favourable for cheap mining to a considerable depth by tunnelling methods.

Economic Geology

The general Geology of the Moina Field has been fully described by A. McIntosh Reid, Geological Survey Bulletin No. 29.

The ore bodies of the Washington mine consist of a series of parallel bedded veins which outcrop on the eastern side of the valley of the Wilmot River. The country rock consists of indurated slate highly silicified dipping easterly at a low angle, about 35 degrees from the horizon. On the southerly portion of the workings the slate is much folded.

The southern limb of a large wide anticlinal fold being exposed in the No. 2 tunnel.

The bedding of the slate generally to the north of the Field is fairly regular.

The general features of the locality strongly indicate that the present lode outcrops represent the lower portions of a former lode system the original outcrops of which occurred at an elevation corresponding with the crest of the high spur through which the Wilmot River has cut its channel.

It is probable that the upper portions of the several lodes were richer in galena than the present outcrops and being much less silicified readily becoming oxidised, erosion by the action of flowing water would be comparatively rapid.

In the main portions of the workings the lode channels are regular and parallel, and would present no difficulty in carrying out a systematic scheme of development work: to the south in No. 2 tunnel working the different conditions present themselves, owing to the folding of the Strata.

The rock exposures here are obscured by surface soil, and very little work being done, it is difficult to arrive at any conclusions respecting the probable extension of the ore bodies in that direction.

A close examination of the lode outcrops along the strike is very difficult to make owing to the precipitous nature of the country. Tracks have been constructed for some distance along the hillside to points at tunnel entrances and surface excavations on the lode outcrops.

The lode formations consist of hard quartzite with impregnations of galena. In some of the exposures irregular occurrences of solid galena can be seen. These vary in extent and are not frequent. The lode formations vary from 2 to 6 feet in thickness.

The upper lode formations so far as exposed, appear to have a slightly higher angle of dip than the lower ones, indicating a possible convergence of the several lodes at a point some distance to the east. Further investigation, by actual developmental work, to confirm this, is necessary.

Mine Workings

No. 1 tunnel has been driven a distance of 160 feet due east from a point on the hillside 150 feet vertically above the river. The country rock is hard silicified slate: at a point 120 feet from the entrance a drive has been put due south for some distance: at 130 feet the lode formation was cut, and driven on northerly a distance of 90 feet.

At end of tunnel considerable accumulations of hydrated oxide of iron occur, being leachings from a lode formation in the vicinity.

From the end of the north drive a rise has been carried through the surface on the lode formations the distance through being 100 feet? The lode assumes a flat underlie (about 1 in. to 2 in.) Owing to the workings being timbered, an inspection of it could not be made. The lode channel exposed in the tunnel workings show small bunches and impregnations of galena, no continuous or regular values can be seen.

From the rise at surface the direction of outcrop is North 25 degrees west, and it has been traced for a considerable distance along the hillside. At intervals a little work has been carried out showing small quantities of galena. The lode material is similar to that exposed elsewhere being very hard quartzite. This lode channel is said to extend northerly 1000 feet or more beyond the present workings.

At a point approximately 100 feet north of vent from No. 1 Tunnel a small excavation has been made on the lode formation exposing a vein of galena 3 feet long by 2 to 3" in thickness. Apart from this very little ore is showing in the banded lode structure.

At an elevation of approximately 700 feet above the river, some distance south east of No. 1 tunnel a small excavation has been made on a lode having an easterly strike and dipping south.

This occurrence is associated with hard indurated green coloured rock containing some nice bunches of galena. At a depth of six feet the lode is here exposed and the occurrence of the galena is very irregular.

The lode can be traced to No. 2 tunnel situated 400 feet lower down the hillside: the latter has been driven easterly a distance of 60 feet from which work some 5 tons of galena was obtained.

No. 2 tunnel is 300 feet south of and 120 feet above the level of No. 1 tunnel. The lode occurs in the southern limit of the anticlinal fold already referred to. On the same line of lode farther down the hillside a small excavation has been made in the formation: samples of galena from this are said to assay up to 200 ounces of silver per ton.

The foregoing is not an attempt to describe in detail the workings of the mine. The country being rough and precipitous, a survey and measurements, which can, without much trouble, be taken on the average mining property is not possible here, consequently particulars given are merely a general outline of the property. The measurements given are approximate only.

The mine is in its initial stage of development, and at the time of this examination no work other than preparations for the erection of a milling plant was in progress.

In the tunnel workings referred to there are no reserves of ore blocked out ready for stoping. In view of this fact an estimation of the quantity or value of the lodes is impracticable. It would certainly be an unwise policy to take samples for assay from the ore exposures as a guide in computing the average metal contents of the ore body as a whole.

In a property such as this, where the metal contents of the lodes are so variable, it is very necessary to have them developed to a stage which will ensure a constant and regular output of payable ore when productive work is commenced.

The country rock is very hard, making the work of underground exploration by hand drilling methods, slow and costly; in this respect the management has been working under very great disadvantages compared to what could have been accomplished with the assistance of a rock drilling plant.

The ore, though hard, is ideal for concentration, there being no heavy minerals present. A high grade galena concentrate can be recovered by treatment in a gravitation milling plant.

Power

A water race has been cut from the Iris River to a convenient point near the mine; the final section is through a tunnel 500 feet in length, 300 feet of which is cut, leaving a section of 200 feet to complete the work. From the tunnel exit is a steep fall of over 350 feet to the Wilmot River.

Providing a constant water supply can be obtained this scheme will provide sufficient power for concentrating purposes.

It is proposed to put in a pipe line and pelton wheel under a working head of 350 feet. With a comparatively short horizontal extension of the pipe line the pelton wheel can be placed in a convenient position at the mill site for a direct drive to shafting.

Concentrating Plant

Preparations are in hand for the erection of an ore dressing plant - a large quantity of the necessary machinery has been delivered at the road terminus to the mine. A site for the plant has been fixed on the east bank of the river below the level on No. 1 tunnel. The work of constructing an incline haulage tram from the terminus of the road to the mill site level is well in hand. A small steam driven saw milling plant has been erected in the vicinity of the Mine. Very good log timber is available close by. This plant will prove to be an indispensable adjunct to mining operations.

J. B. Scott.
GOVERNMENT MINING ENGINEER.

15th March, 1927

Legal Manager - A. Leo Karnes,
Room 75, 5th Floor, Southern Cross.Bldg.,
MELBOURNE.

To Mr. T.L. Kitto the writer is indebted for information and assistance which is gratefully acknowledged also for hospitality extended by him and Mr. Taxley.