

MOUNT REX TIN MINE

Notes on Proposed Works

by

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Underground Work:

No. 3 Level. First objective to locate continuation of "Main Pipe" below No. 2 level.

The present evidence appears to be that of three samples taken by Mr. E. Gray at the bottom of the winze connecting Nos. 2 and 3, and which is reached by a short Crosscut from the latter level.

Sampling by mortar and dish would be of assistance along the Crosscut with the objective of defining the ore bearing rock. In this, negative results would have a bearing.

Assuming that results were negative, other than at the bottom of the winze, the next procedure would be to follow the values by continuing the short Crosscut and driving northerly and southerly from it as may be indicated by the dish prospects.

If the values continue northerly, another Crosscut could be put out easterly at say 50 ft. from the first, and so on. What is termed the No. 3 ore body should be closely prospected and particularly on its eastern side. Comparison of the main pipe at 2 and 3 levels shows a tendency for it to "string" out northerly at the latter and it may be that the No. 3 ore body is part of the continuation of the main pipe and also that the east-west fissure is an incident at that point.

On the present evidence it looks somewhat as if the ore body (main pipe) may lie east of No. 3 Crosscut about the vicinity of the short Crosscut. The first work should be to sample by mortar and dish along the main cut, noting any fissures or rock changes, and to define the points at which values may occur. Next to follow the values, at the same time taking into consideration those which may be only local.

No. 2 level. The Crosscut should be continued northerly for 65-70 ft. on a due north course and then turned N. 45 deg. E., when it should intersect No. 2 level clear of the stopes. These stopes can probably be then entered from that end and examined. It will be fairly certain that although the timber, under these stopes, is broken, there will not be very much rock on them and that repair will not be very difficult if approached from that end.

These repairs are essential as the broken timbers are over the winze which forms an airway from No. 3 level.

This work will also permit of an examination of the northern end of No. 2 level drive and of exploration of the upper continuation of the No. 3 ore body.

The foregoing deals mainly with the work in connection with the main pipe.

That in regard to the No. 3 ore body and "White" ore body would consist of lateral exploration preferably by drill holes and of rising. With compressed air power available, the drill holes would be put out slightly above the horizontal with an axial water feed drill and the sludge tested for values.

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In all cases it has to be recognised that the ore occurs, not as lodes filling defined fissures but as irregular shaped bodies of mineralised rock, and that it is a matter of close examination and testing.

For the needs of carrying out this work it will be necessary to lay flat sheets and truck roads to the various points and to provide air and water services for rock drills. The cage rests at the plats will require to be adjusted; the skidways of shafts overhauled, and knocker lines and gear provided. For drilling purposes, two rigged drills of drifter type, and a telescope drill will be required.

Surface Works:

It will be necessary to erect Head Gear for hoisting and of sufficient height to permit of safety brace and detaching gear. As the landing of rock, hoisted, would be at the surface, the requirements of height would be approximately 25-26 feet.

Landing facilities and tip heads would be accessory.

For raising men and rock a safety cage is required which could be run in balance with the baling tank.

The present dimensions of the winding shafts are 4' x 4' with 4" x 4" skids. The distance between skids is thus 3' 4" and, allowing clearance, a cage width of 3' 3 $\frac{1}{4}$ " is indicated. This is wider than the usual for rock hoisting where trucks are used but would be useful in the event of large output and hoisting with skips.

It would be advisable to adhere to present shaft dimensions to keep provision for this latter event.

The distance between the centres of the winding shafts is 4' 3" which is considerably more than the usual distances between the centres of drums on the ordinary winch. In order to prevent abnormal wear on ropes it would be necessary to erect the hoisting plant at an ample distance from the shaft to allow the ropes some flexibility in coiling on drums. This will require that, in the design of head gear, provision must be made to allow for the resultant strain which will be much greater on the side pull. (Winch side)

For hoisting, a double cylinder winch of 8" diameter cylinders and with fast and loose drums would serve the purpose. Post brakes would be an advantage. With 42" diameter drums, a rope of 6/7 x 2 $\frac{1}{2}$ " diameter would serve but with smaller drums a 6/19 rope would be required. This would be in plough steel quality.

For hoisting only, the present boiler, if lagged, would probably serve the purpose.

For air compression a machine of delivery capacity of 150 - 200 cubic feet free air per minute is needed. If steam driven, it would require a boiler capable of supplying steam of suitable pressure for 45-50 H.P.

As the water supply for boilers will, for the earlier stages, need to be obtained from the shaft, tests of this will require to be made to ascertain if corrosive and/or scale forming.

For the requirements of sawn timber which will be needed in the works it is advisable to enter into arrangements for this from a local bush mill at an early date; this owing to a likelihood of the mill being moved from the district. In this connection the clearing of the top road from the mine to the Avoca - Storey's road is advisable, provided that the cost would be

justified by the saving in cartage. The erection of a small cottage which would serve as staff quarters and office is necessary.

Labour requirements would be :

Manager	1	6
Underground		
Foreman	1	3
Blacksmith	1	2
"Striker	1	2
Enginedrivers	2	
Bracemen	2	
Truckers	2	
Miners	8	
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This would provide for two shifts to be worked underground. It is assumed that the manager and foreman would carry out sampling in addition to other duties. In this connection an extra man could be employed to advantage in investigating the surface and shallow exposures of ore. The costs of labour and stores may be taken at approximately £100. per week.

Tabulating the requirements these would be as follows :-

Main Shaft - Flat sheets
 Rails
 Trucks
 Landing rests for cage
 Knocker Lines
 Head Gear. Safety Gear.
 Overhaul of Skids and centres
 Safety Cage
 Rock Drills
 Steel
 Tools
 Piping.

Surface. Engine & Boiler House
 Smithy and tools
 Water Tank
 Change House
 Magazines
 Staff Quarters
 Hoisting Winch. Rope.
 Air Compressor. Air Receiver
 Boiler. Feed Pump.

The cost of these very much depends upon what may be available. Secondhand Plant, if in good condition, would serve the purposes and would cost much less than new. Under favourable circumstances and purchases, £1,000. would probably meet the cost; on the other hand, there has been a considerable demand for plant and the needs may not easily be obtained cheaply. Enquiries from likely sources are being made.

Operations : The first work would be that of making provision for hoisting rock and men. As soon as these facilities are available, mining work could be started by hand drilling and the erection of the Compressor and its gear put in hand.

The building operations could go on as timber is delivered.

sgd. W. E. Hitchcock.