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PLACER PROSPECTING PTY. LTD.

MICROFILMED

SUMMARY REPORT

to the

DEPARTMENT OF MINES, TASMANIA

on

SPECIAL PROSPECTORS' LICENCE NO.11

DUNDAS MINERAL FIELD, TASMANIA

LOCATION.

S.P.L. No.11 lies in the Dundas Mining Field, nine miles east of the town of Zeehan to which it is connected by graded gravel roads. Zeehan is connected by main highways to the north coast of Tasmania at Burnie and the east coast at Hobart.

MINING TENEMENTS.

The S.P.L. was originally taken up in March 1964, in conjunction with the negotiation of option agreements over the Razorback and ~~Grand~~ GRAND Prize Mines. Since that time exploration of the S.P.L. has been carried out along with the detailed investigation of these two mines.

The S.P.L. was formally relinquished on the 19th December, 1966.

GENERAL GEOLOGY.

This has been fully described in Government reports and in previous reports by this company. To summarise the area is underlain by greywackes, black slates and grits of the Middle Cambrian Dundas Group. These sediments have been intruded by an ultrabasic sill which is now serpentinitised. Regional structure is complex and difficult to unravel due to dense forest and soil cover. The Razorback area appears to be on one limb of a major fold structure which, in the Grand Prize area, has been disrupted by faulting.

GEOLOGY OF THE MINERALIZATION.

The area was maintained and prospected primarily for potential tin deposits. Two environments of tin mineralizations were investigated:-

- (1) the Razorback type, in which it was confirmed that the ore is localised at the contact of a competent grit-slate member and an incompetent serpentinitized ultrabasic rock. It is likely that there has been a positive structural control superimposed on the rock environment in the form of a gentle, steeply east dipping and south pitching flexure of the grit-serpentine contact zone. In this structure there has been localization of sulphide ore and a maximum development of steatitisation and, in particular, dolomitisation which is believed to be a phase of wall rock alteration associated with mineralisation.
- (2) the Grand Prize type, in which a transverse fault zone forms the ore channel for sulphide replacement of strongly sheared slates and grits. Very little wall rock alteration is associated with this type of mineralisation and there was a notable absence of talc and dolomite alteration products.
- (3) Minor mixed base-metal occurrences generally associated with small quartz veins or shears through basic igneous bodies. None of the occurrences examined were investigated beyond the detailed inspection stage.

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SUMMARY OF ACTIVITIES ON S.P.L. NO.11 AND THEENCLOSED LEASE OPTION AREAS.

Due to the nature of the work carried out, it is not possible to separate activities on the option areas from those on the S.P.L. For this reason, a precis of all work carried out will be made.

1. Regional mapping at 1" = 200' of the area from the Razorback Mine to the Grand Prize mine, utilizing lines cut for the earlier B.M.R. geophysical survey in 1960. This work initially suggested that there may be repetition of ore due to a complex folding of the grit-dolomite contact zone but, unfortunately, later work did not substantiate the theory. The mapping also disproved any direct structural connection between the Grand Prize and Razorback lodes.

2. Surface diamond drilling was begun at Razorback in early 1964 in a series of probes of the hitherto unexplored sulphide zone beneath the partially worked gossan body.

3. At Razorback, driving of an adit was begun in early 1964 designed to intersect the grit-serpentine contact roughly 130 feet beneath the surface gossans. This adit intersected its target in August 1964, and driving north and south commenced immediately. Surface diamond drilling was carried on during this underground work.

Once driving had commenced in sulphide lode work, a series of bulk sample methods were tried, finally, resulting in the construction of a small jaw-crusher/Jones splitter sample plant which was adequate to handle the three round per day average output of the mining areas. An assaying office was equipped in Zeehan and all the sampling was carefully controlled by Placer employees. A series of crosscuts across the ore body was made at roughly 50' separations which were sampled initially by full round sampling and later by a roof firing technique.

4. Underground diamond drill holes were used at Razorback to probe beyond the limits of visible mineralization from the ends of crosscuts and a series of short steep holes tested to 150' below the adit level.

All existing workings were channel sampled. These workings were mainly in oxidized and semi-oxidized ore.

5. In late 1964, underground exploration of the No. 4 level at the Grand Prize Mine commenced. The lodezone was investigated by driving north from the face of the existing adit and crosscutting at about 50' intervals to test for width. At the same time a new drive was begun to the south from a portal immediately opposite the No. 4 north drive portal, on the south bank of Nevada Creek. Crosscuts were also put out from the south drive.

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Sampling was carried out by -

- 1) Channel sampling
- 2) Bulk sampling by roof stripping of cross cuts.
The material was run through the existing crushing and tabling plant at the Grand Prize. The main sample was taken by an automatic sampling of the table feed and was roughly checked against returns from concentrate, middling and tail returns.

A second level, 100 feet below the No. 4 level was prospected via the existing Crazes Adit from which north driving and crosscutting was made under difficult conditions.

6. Two diamond drill holes were bored below the Grand Prize No. 4 level, one shallow hole beneath the No. 4 adit portal and a deeper probe beneath the Crazes Adit workings.

DISCUSSIONS OF RESULTS.

Grand Prize Area. The mineralization lies within a prominent fault zone some 3000' in length, which disrupts a folded series of shales and grits. In the mine area the sediments dip south at between 30° and 75° and are transgressed normal to their strike by the north-south trending Grand Prize fault.

A major feature of the fault is the depth of oxidation which, at the mine, has been encountered over a vertical depth of 600 feet. It was considered that this oxidized ore would require only simple treatment and would return a high percentage recovery of tin.

Because of the great limitations in drill sites and the poor recovery inherent in drilling this type of ore, a programme of underground exploration was commenced in 1965 to test two levels - the No. 4 level and Crazes level - which are 100' apart, using in both cases, approach adits driven during previous mining activity at this mine.

A total of 880 feet of driving and 350 feet of cross-cutting was completed, including 200 feet of bulk sampled cross-cuts.

This work revealed that the lode zone swells and pinches, with the consequent development of two ore shoots within the 100' length explored. The shoots were characterised by the development of distinctive, puggy fault gouge zones which caused difficulties in driving through the narrower sections of lode and slowed down the rate of progress, particularly in the lower or Crazes level drive.

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Bulk Sampling at the Grand Prize Mine.

A bulk sampling programme was undertaken at the No. 4 level and was completed in November, 1965.

The lode zone was bulk sampled by eleven cross-cuts spaced where possible at 50' intervals and tested the northernmost of the two shoots outlined over a strike length distance of 600'. All rock mined during cross-cutting was crushed and tabled. Head feed to the tables was automatically sampled and the results of this sampling has been used in estimating grade.

The results of the bulk sampling were disappointing with an overall grade of 0.32% Sn metal. This was lower than the earlier average of 0.42% Sn calculated from channel sampling of the central section of the northern ore shoot.

RAZORBACK AREA.

The detailed work carried out underground revealed the ore controls at the Razorback mine, which can be summarised as follows:-

- 1) The slightly sheared and brecciated grit-serpentinite contact which forms the favourable zone of mineralization.
- 2) Within this zone, sulphides generally concentrate in veins and lenses, as well as in areas of finely disseminated mixed sulphide spots.

These lenses have variable attitudes but the larger ones appear to favour a shallow dip. These shallow lenses, if not recognised, can give false widths and grades to mineralization intersected in flat drill holes and crosscuts. In the centre of the Razorback ore body, density of the lenses would have permitted bulk mining but a rapidly reduced density occurs laterally away from the body.

- 3) The sulphides are in a gangue of dolomite-steatite which also forms a highly distinctive alteration aureole to the locus of mineralization.
- 4) The pitch of the ore body is determined by a gentle flexuring of the grit-serpentinite contact. It is possible that repetition of the Razorback ore body could occur at depth, 'on structure' with the present ore shoot. No attempt was made to deep drill on this hypothesis. Repetition of structure on strike is another possibility but no success was attained in the search for new structural positions.

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RAZORBACK AREA (cont'd.)

At the surface, mineralization is expressed as either

- (a) dark brown, gossanous ironstone
- (b) highly silicified cavernous gossan.

The former generally represent the true sulphide veins in a steatite dolomite host rock, while the latter represent sparse disseminated sulphides or magnetite through a dolomite host rock. Two drill holes tested these silicified gossans and both ~~inter-~~ intersected sulphides carrying only trace tin and copper values.

METALLURGICAL TESTS.

A number of tests were run on ores and are shown in the appended reports.

DRILLING.

Logs of all holes drilled within the S.P.L. have been forwarded intermittently to the Department of Mines.

10th March, 1967.



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