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62-347

GEOLOGICAL REPORT NO.1.

of

RAZORBACK MINE
Zeehan, TASMANIA.

by

J. L. Morton

3rd September, 1962

Accompanying Report:

Composite Plan	Scale	1" = 20'
Geological Plan at R.L.790'		1" = 20'
Longitudinal Projection		1" = 20'
Plan of Major Structure		1" = 200'

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S U M M A R Y:

Detailed mapping and study of the Razorback Mine, Zeehan, Tasmania has shown the ore to occur in four separate lenses within an accumulation of sheared and folded host material about 1000 feet long and 400 feet wide at the maximum point.

Although additional lenses could be expected to be found, it is virtually impossible to fit more than another six into the major structure, limiting possible oxidised ore to a maximum of 140,000 tons.

INTRODUCTION :

A detailed geological examination of the Razorback Mine, Zeehan, Tasmania has been undertaken for the purposes of gaining data on ore environment and possible structural controls as an aid to possible drill hole or other exploration layouts.

EXAMINATION :

An examination of the productive areas of the mine was carried out by the writer between July 16th and 27th, 1962. A transit survey involving some 2000 feet of surface and 1500 feet of adits and drives was carried out as geological mapping control. Graphical plot of this work was done in the field, to facilitate geological work, and later calculated to ensure an accurate map.

All accessible openings were geologically mapped on 1" = 20'.

MAJOR STRUCTURE :

Detailed mapping and study of available drill and geophysical data outline, in rough detail, the major structure of the Razorback Mine. The theory suggested in Preliminary Geological Report dated 20th March, 1962, relating to major structure is not entirely correct. In addition to a simple shear, as suggested, a large accumulation of sheared material occurs associated with the bend in sediments, enclosed on the southern end by a violent roll in serpentine of about 350' displacement. This lens of host material measures about 1000 feet long and is about 400 feet at the widest point. Please refer 200 scale plan. Occurrence of additional ore zones to the east, within this lens is quite feasible.

A build-up of material is usually accomplished under the influence of two actions, shearing, where particles of rock slide over their neighbour, doubling the thickness etc. and folding, also causing a build-up in thickness. No definite signs can be recognised in the gossans, but folding along the footwall in the region of known orebodies, and the shapes of orebodies, suggest folding as the main control localizing ore deposition. Four separate zones occur in the mine area.

ASSOCIATION OF TIN VALUES :

At two points along the hangingwall of No. 3 ore zone values are shown to be closely associated with sulphides.

Please refer 20 scale composite plan. Association of values in gossanous material is very difficult to define, since in some cases material of what appears to be negligible iron content contains high tin values. This is thought to be due to the fact that the material originally contained lesser amounts of disseminated sulphides which have been totally oxidised and iron minerals leached leaving the tin. This commonly occurs along the footwalls of orebodies. However, typical gossans of high iron content usually show strong associations with tin, notably in Brock's tunnel and at the southern end of the main open cut.

Apart from pure and disseminated sulphides in the primary ores, sulphides are also associated with dolomite. It is thought that dolomite protects its associated sulphides from oxidation to some extent.

OXIDATION :

Oxidation varies with depth and composition of primary material. Disseminated sulphides were noted to be oxidised in No.2 tunnel at R.L.800, pure sulphides are oxidised to about R.L.850 in the vicinity of the Main Workings and dolomite ores are not oxidised. It is also expected that the level of oxidation will roughly follow surface contours.

ORE POTENTIAL :

Ore occurs in lenses. Please refer 20 scale Longitudinal Projection. Four lenses are known to date, these are summarised as follows :

	Tons per vertical foot
Zone No.1.	87
2.	184
3.	260
4.	224
Total	755

Average - 189 tons/vertical foot, per zone.

Assuming oxidation to extend to an average depth of 75 feet, and accounting for ore already mined, the known zones could not be expected to yield more than 50,000 tons of oxidised ore.

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GENERAL OBSERVATIONS:

Bureau of Mineral Resources geophysical work indicates a mineralised zone on the hangingwall of the major structure. This anomaly registered as 5000 gamma magnetic, strong SP and medium EM, although possibly disseminated magnetite in serpentine, it could be a pyrrhotite body.

Gossan was exposed in a road cut near the hangingwall of the host zone, 200 feet out from the footwall. Of two samples taken from this gossan one assayed .11% Sn.

CONCLUSION:

Major structure of the Razorback is now reasonably well outlined. Ore occurring in lenses will be confined within the major structure, thus limiting the length to about 1000 feet. Indications are that more zones could be found, it is judged that there is room for another six.

Assuming ten zones (four known and six possible) at an average of 189 tons/vertical foot, indicates a possible 1,890 tons per vertical foot. This is a maximum figure. Assuming oxidation to extent to an average depth of 75 feet no more than 140,000 tons of ore could be expected.

J. L. Morton

Melbourne,
3rd September, 1962

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RAZORBACK MINE - TRAVERSE SHEETS

Stn. No.	N. Co-ords	E. Co-ords	Reduced Level	Type
1	1959.00	599.00	835.00	Surface wood peg.
2	1942.41	566.43	840.76	Surface wood peg.
3	1877.60	534.96	850.33	Surface wood peg.
4	1962.96	531.15	846.79	Surface wood peg.
5	2067.62	614.58	847.67	Surface wood peg.
6	2010.41	474.37	852.02	Surface wood peg.
7	2114.57	726.27	853.30	Surface wood peg.
8	2284.10	768.75	870.36	Surface wood peg.
9	2406.57	731.50	880.83	Surface wood peg.
10	2482.01	679.81	889.61	Surface wood peg.
11	2347.18	732.69	888.22	Surface wood peg.
12	2583.22	566.75	903.46	Surface wood peg.
13	2237.92	700.33	900.83	Surface wood peg.
14	2175.72	531.57	929.62	Surface wood peg.
15	2625.60	421.21	919.63	Surface wood peg.
16	2546.97	448.10	955.24	Surface wood peg.
17	2637.75	341.80	952.34	Surface wood peg.
18	2699.20	270.76	937.68	Surface wood peg.
19	2086.24	470.04	853.89	Underground nail in back.
20	2101.44	488.58	853.82	Underground nail in timber.
21	2097.39	462.15	852.93	Underground nail in back.
22	2110.80	530.66	854.26	Underground nail in back.
23	2106.01	465.07	853.60	Underground nail in back.
24	2141.07	486.79	853.44	Underground nail in back.
25	2280.99	396.67	937.39	Underground nail in back.
26	2463.44	374.63	963.21	Underground nail in timber.
27	2414.72	372.47	963.78	Underground nail in back.

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Stn. No.	N. Co-ords	E.Co-ords	Reduced Level	Type
28	2445.68	357.94	963.81	Underground nail in back.
29	2458.69	362.83	962.43	Underground nail in back.
30	2360.27	384.09	965.79	Underground nail in back.
31	2502.07	328.32	936.82	Underground nail in timber.
32	2529.46	288.44	956.42	Underground nail in timber.
33	1924.47	711.46	786.11	Surface wood peg.
34	1933.22	651.37	790.51	Underground nail in timber.
35	1938.54	564.36	792.40	Underground nail in back.
36	1950.62	532.10	794.97	Underground nail in back.
37	1987.87	511.41	794.30	Underground nail in timber.

1900 N
2000 N
2100 N
2200 N
2300 N
2400 N
2500 N

200 E
300 E
400 E
500 E
600 E

N

ZONE 1
ZONE 2
ZONE 3
ZONE 4

Brecciated

650 W
600 W
550 W
400 W

Normal offset due to dip in exposure

White pug

D.D.H. No.1
D.D.H. No.2
D.D.H. 3

B.M.R. 21 N
B.M.R. 22 N
B.M.R. 23 N
B.M.R. 24 N

LEGEND

- Earthy limonitic gossan
- Talcose limonitic gossan
- Hard limonitic gossan
- Dolomite
- Disseminated / Massive sulphides
- Slate
- Conglomerate
- Geological contact defined
- Geological contact projected
- Geological contact inferred
- Fault defined
- Fault projected
- Fault inferred

20 10 0 20 40 60
Scale of feet.

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ABERFOYLE TIN DEV. PARTNERSHIP

62-347

RAZORBACK MINE

COMPOSITE PLAN

010

R. HARE & ASSOCIATES

SCALE : 1 INCH = 20 FEET

		REVISION
Prepared:	J.L. Morton	
Drawn:	B.L.	
Date:	31 · 8 · 1962	

5 cm

1900 N 2000 N 2100 N 2200 N 2250 N 2400 N 2500 N

300 E

400 E

500 E

600 E

700 E

N

Projected Footwall at R.L. 785'

Brecciated

Fault gouge

Gradational contact

No. 2 Adit

75°

85°

?

LEGEND

- Earthy limonitic gossan
- Talcose limonitic gossan
- Hard limonitic gossan
- Dolomite
- Disseminated / Massive sulphides
- Slate
- Conglomerate
- Geological contact defined
- Geological contact projected
- Geological contact inferred
- Fault defined
- Fault projected
- Fault inferred

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RAZORBACK MINE

GEOLOGICAL PLAN

AT R.L. 790'

008

R. HARE & ASSOCIATES

SCALE : 1 INCH = 20 FEET

		REVISION
Prepared :	J.L.Morton	
Drawn :	B.L.	
Date :	28-8-1962	

5 cm

1900 N
2000 N
2000 N
2200 N
2300 N
2400 N
2500 N

RL 1100
RL 1000
RL 900
RL 800
RL 700

Natural surface

MAIN OPEN CUT

Caved stope

?
?

MAIN TUNNELS

NO. 1 TUNNEL

BROCK'S WORKINGS

Stoped above tunnel (not surveyed)

Stoped above tunnel (not surveyed)

BROCK'S ZONE 4

224 TPVF

POSSIBLE SULPHIDE ZONE 1

87 TPVF

PROBABLE SULPHIDE ZONE 2

184 TPVF

MAIN INDICATED SULPHIDE ZONE 3

260 TPVF

No 1 Adit

D.H. 3.
Intersected values over 25'

D.H. 1.
·301 % Sn
37'

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RAZORBACK MINE

LONGITUDINAL PROJECTION

LOOKING WEST

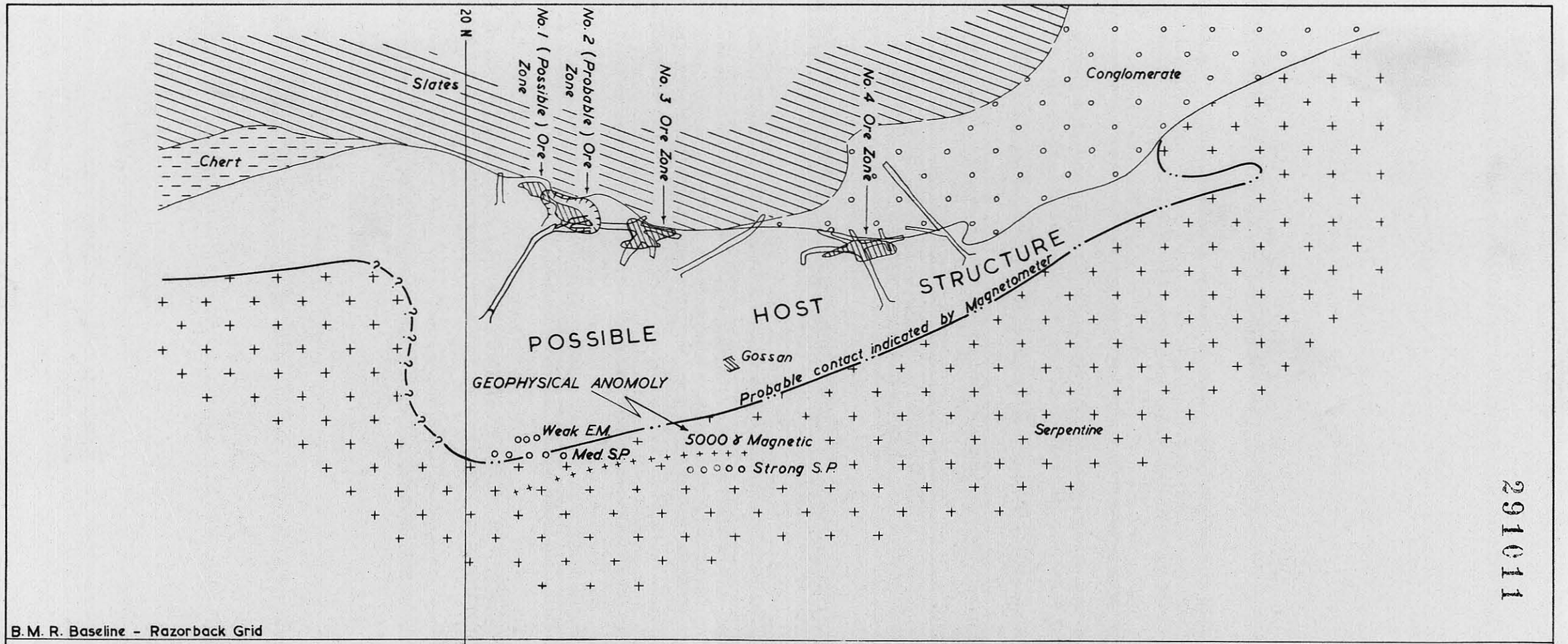
009

R. HARE & ASSOCIATES

SCALE : 1 INCH = 20 FEET

		REVISION		
Prepared :	J. L. Morton			
Drawn :	B.L.			
Date :	29 · 8 · 1962			

5 cm



B.M.R. Baseline - Razorback Grid

200 100 0 200 400

Scale of Feet.

5 cm

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RAZORBACK MINE

PLAN OF MAJOR STRUCTURE

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