

TR 12-14-19

2. MAGNETOMETER SURVEY OF PART OF THE NORTH SAVAGE RIVER IRON DEPOSIT

by D. E. Leaman

GENERAL

Exploratory magnetic traverses of the North Savage River iron deposit were made using a Jalander portable magnetometer (No. 873). The area covered was 5,000 feet by 1000 feet. The traverses have base points on the route of the pipe line to Port Latta and are situated approximately one mile from the crossing of the Savage River.

Previous geophysical work on the Savage River iron deposit includes aeromagnetic and ground surveys by the Bureau of Mineral Resources, Eadie (1962, 1963); Sedmick (1961). The Rocky River deposit has also been examined, Urquhart (1966, p. 80). The aeromagnetic survey indicates that the ore body is abruptly curtailed to the N and it is thought that the particular area now under consideration covers the N end of the anomaly.

GEOLOGY

The rocks present include steeply dipping schist and amphibolite. There is a basalt cover S of profile 1 (fig. 4) and this prevents magnetic work being undertaken. The geology of part of the area is given by Urquhart (1966).

GEOPHYSICAL RESULTS

The results, together with comments on their character as determined by the instrument, are in Table 1.

The range of anomaly is 0-8,000 gammas, with the maximum anomaly being restricted to one particular zone. This zone has a NNE trend and occurs between profiles 4 and 10. There are three larger areas of moderate anomaly (2,500 gammas); located on profiles 3 to 5, profile 7 and profile 10.

The maximum anomaly in this area is considerably less than elsewhere in the Savage River area and about a tenth that over the Rocky River deposit which is thought to be a similar type of ore. Profiles of the traverse line are also shown in fig. 4.

INTERPRETATION

The regional gradient of approximately 6 gammas per mile has not been removed. The character of the anomalies is suggestive of thin steeply dipping pods of magnetic material at various depths. The very sharp anomaly on profile 8 implies a very thin zone of magnetite at or very close to the surface.

The asymmetry of this anomaly implies a dip of approximately 30° - 40° to the SE, probably plunging to the N. A similar pod of material also occurs at 1,000 feet on profile 4. Both pods of material appear to occupy the same zone, although the S one appears to be more nearly vertical.

The anomaly at P7, 1,000 feet also appears to have an eastward dip, but it is probably only some 100 feet deep. Similar estimates of depth apply to the anomaly at P10, 700 feet, but there is some suggestion that the dip here is westward. The anomalies at P3, 300 and P5, 200 are also about 100 to 300 feet in depth and a westward dip is suggested. Fig. 5 suggests the strike and dip of the bodies and the approximate depth interpreted. Ribbon models have been considered.

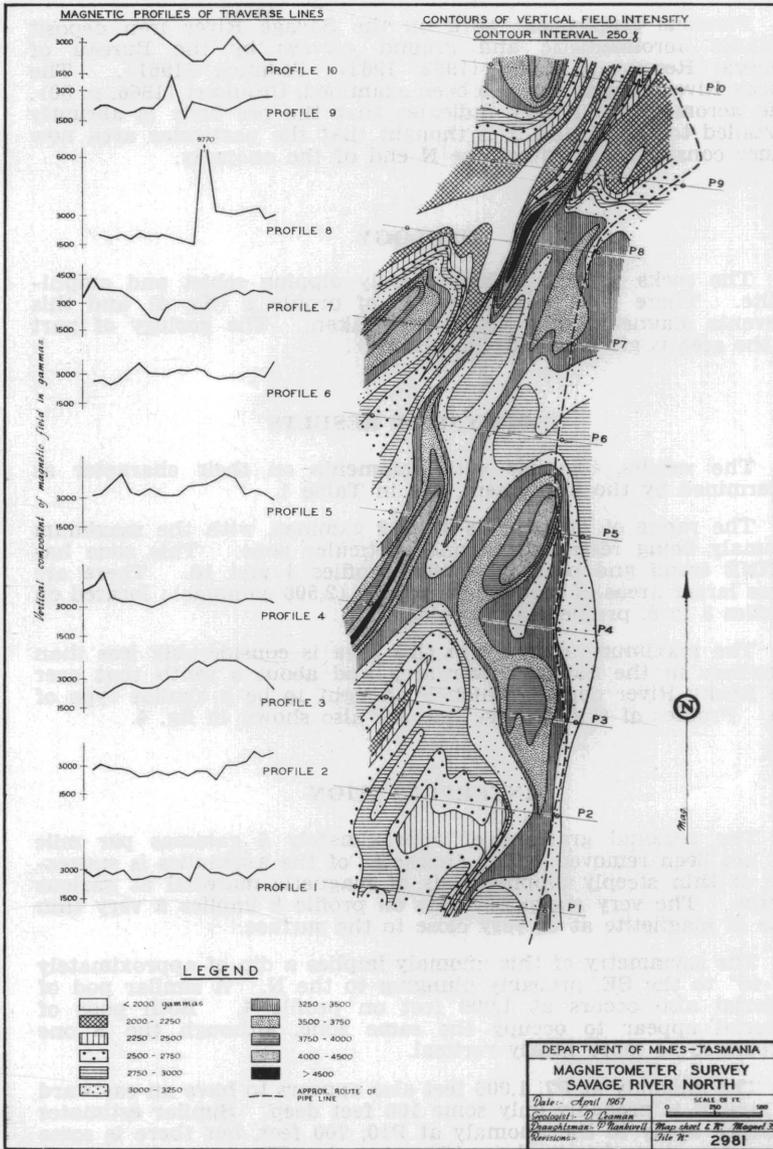


FIGURE 4

MAGNETOMETER SURVEY—SAVAGE RIVER NORTH

Peg. No. (feet)	Line	FIELD IN GAMMAS									
		1	2	3	4	5	6	7	8	9	10
00	3,300	3,600	2,400	3,150	2,850	3,600	3,450	3,300	2,700	2,100
50	3,000	3,450	3,000	3,300	3,150	2,850	3,600	3,150	2,700	2,100
100	3,000	3,750	3,300	3,300	3,300	3,000	3,600	3,600	2,700	2,100
150	2,550	3,150	3,600	3,300	3,150	3,000	3,450	3,450	2,550	2,850
200	2,850	3,000	3,900	3,150	4,050	2,850	3,600	3,300	2,400	2,400
250	2,700	3,000	3,900	3,150	4,200	2,850	3,450	3,300	2,100	3,300
300	2,850	2,250	3,900	3,300	3,900	2,700	3,150	3,450	1,950	2,700
350	2,850	2,700	3,750	3,300	3,750	3,000	2,700	5,100	2,100	2,700
400	3,450	2,700	3,900	3,450	3,600	3,300	2,700	6,600	2,250	2,100
450	2,400	2,550	3,600	3,600	3,400	3,150	3,000	1,650	2,400	1,950
500	2,850	2,700	3,150	3,600	3,300	3,150	3,000	1,800	1,500	2,400
550	2,790	2,550	3,150	3,450	3,150	3,000	2,700	1,950	3,750	2,700
600	2,700	2,700	2,700	3,150	3,150	3,000	2,100	2,100	2,700	3,150
650	2,700	2,550	2,550	3,000	3,450	3,000	2,250	2,100	2,100	3,600
700	2,550	2,400	2,550	3,150	3,150	3,600	3,000	2,100	2,100	4,050
750	2,550	2,700	2,700	3,300	3,300	3,300	3,300	1,950	1,950	4,050
800	3,000	3,850	2,700	3,300	4,050	2,850	3,600	2,100	1,800	3,600
850	2,850	2,850	2,550	3,450	3,750	2,550	3,600	1,950	2,100	3,600
900	3,000	3,000	2,100	4,650	3,300	2,700	3,750	.....	2,250	.....
950	2,760	2,850	2,550	4,200	3,150	2,700	4,200	.....	2,100	.....
1,000	3,000	.....	.....	3,900	.....	.....	3,300	.....	.....	.....
1,050	3,600	.....	.....	.....	.....	.....	.....
325	2,700	.....	.....	.....	.....	.....	3,900	.....	.....
375	9,770	.....	.....
425	1,500	.....	.....
875	3,900	.....	.....	.....	.....	.....	.....

Base value of field near Savage River township: 1,500 gammas.

NOTE ON RESULTS:—

Jalander 873. All readings were negative on the instrument; this being a result of its northern hemisphere origin, marking of dials and present latitude adjustment.

The plot of results is therefore given positive so that a correct southern hemisphere interpretation is possible. Most results were obtained on scale 2 of the instrument.

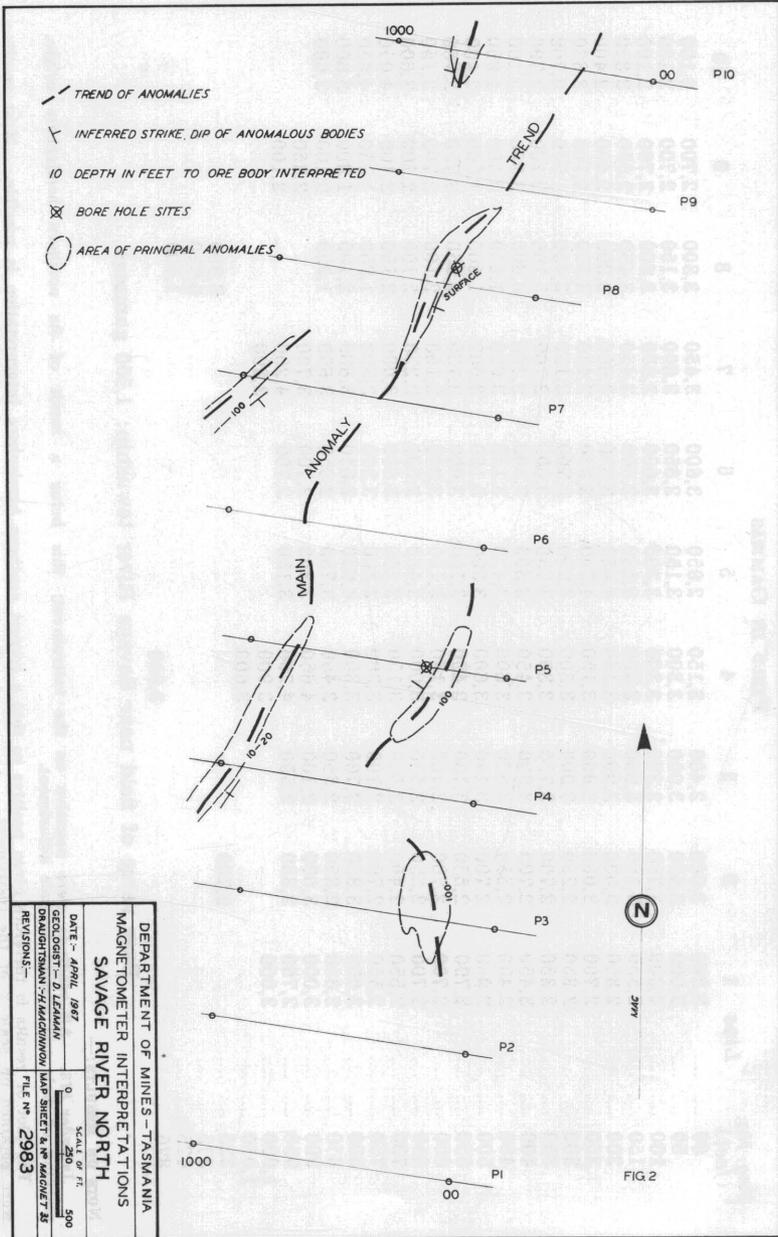


FIGURE 5

CONCLUSIONS

The magnitude of the anomalies in this area is much less than elsewhere in the Savage River area, implying much less ore is present or that it is very much deeper or of lower grade. Little drilling could be recommended on the present results although two holes are suggested on fig. 5.

Bibliography

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