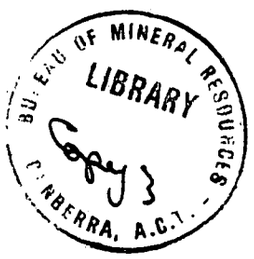
COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

RECORD No. 1961-114



WATERHOUSE AREA, TEST MAGNETIC SURVEY AT CLAIM 51B, N.T. 1961

by

D.L. Rowston

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ILLUSTRATIONS

ABSTRACT

A geophysical survey was made over a small hematitic iron ore-body situated in Mineral Claim 51B in the Hundred of Waterhouse, N.T. to test the applicability of the magnetic method. The absence of significant anomalies indicated that the method is unsuitable for locating similar iron ore deposits in the area, and that a full-scale magnetic survey is unwarranted.

1. INTRODUCTION

Mineral Claim 51B is held by the Anglo-Pacific Trading Co. Ltd which is currently investigating the iron ore potential of the area. The claim is also referred to as the "B.W. Iron Claim" held by Mr. B. Brown as a local representative of the Company.

M.C. 51B lies in Sections 7 and 8 of the Hundred of Waterhouse and is situated about 6 miles west of Stapleton Siding on the North Australian Railway. Stapleton is 62 miles by rail from Darwin (Plate 1). Road access to the Claim is either via Batchelor and Banyan Homestead or along a bush track west from Stapleton Siding. Both tracks would be impassable during the wet season.

In April 1961 the Company submitted a request to the Bureau of Mineral Resources for a magnetic survey to aid their prospecting campaign. However, a study of the results of an aeromagnetic survey flown over the area by the Bureau in 1952 indicated that, as there were no significant airborne anomalies, it was unlikely that a ground survey would be effective. It was decided, therefore, to test the applicability of the method and determine whether a full-scale survey was justified.

The test survey was made by the author in July 1961.

2. GEOLOGY

A geological survey of the "B.W. Claim" was made by staff of the Resident Geologist's Office, Northern Territory Administration, in April 1961. The following brief notes are abstracted from their report (Unpublished at 10.7.61).

> The iron deposits occur as lenses and bands of massive hematite and specularite within a tightly folded slate bed. The slate, as part of a sequence of sedimentary and metasedimentary rocks close to the southern contact of the Waterhouse granite, lies between a ferruginous sandstone and quartzite breccia (Plate 1). In general the beds strike north-west and, except for the quartzite breccia, dip steeply to the south-west. The breccia is unconformable and is thought to indicate a thrust fault.

The Company has bulldozed several costeans in the area, dug numerous prospecting pits, and sunk a shallow shaft on the most promising hematite body. This lens of ore-grade material is about 64 feet wide, 120 feet long and is, in the shaft, terminated at a depth of 21 feet by a postulated thrust fault. Two conformable bands of hematite, approximately 6 feet wide, were uncovered in costeans in the eastern part of the area.

3. GEOPHYSICAL SURVEY AND DISCUSSION OF RESULTS

Five short traverses were pegged across the known ore-body and hematite bands to test the efficacy of the magnetic method. The locations of the traverses, designated A to E, are shown on Plate 1.

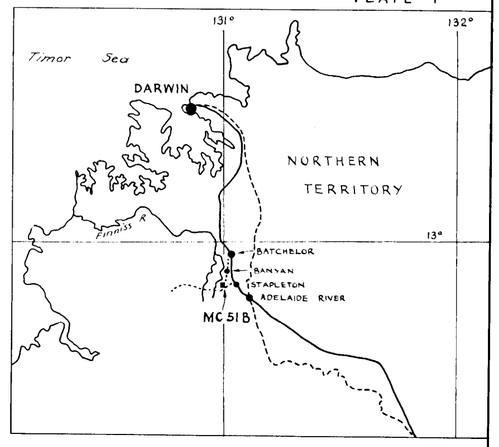
Observations at 25- and 50-foot intervals along the traverses were made using the Watts vertical variometer No. 69109. The results of the work are given as vertical magnetic force profiles on Plate 2; the profiles are corrected for diurnal variation and refer to the arbitary base stations 150S on Traverse B (A, B, and C) and 200N on Traverse D (D and E).

The results, which in general show anomalies less than 50 gammas, are sufficient to demonstrate the low susceptibility of the hematite ore. Although small increases in the vertical intensity occur over the bands of hematite on Traverses D and E, the increases are not well pronounced and could as well be attributed to other sources.

Traverse B, which was pegged to test the ore-body and the susceptibility contrast between different beds of the sedimentary sequence, gave no significant results. The maxima and minima at 75N and 125S respectively could arise from a dipping, tabular, weakly magnetic body but here again the association is too indefinite to be reliable. There are no recognisable features on Traverses A and C that can be reconciled with the extremities of the ore-body.

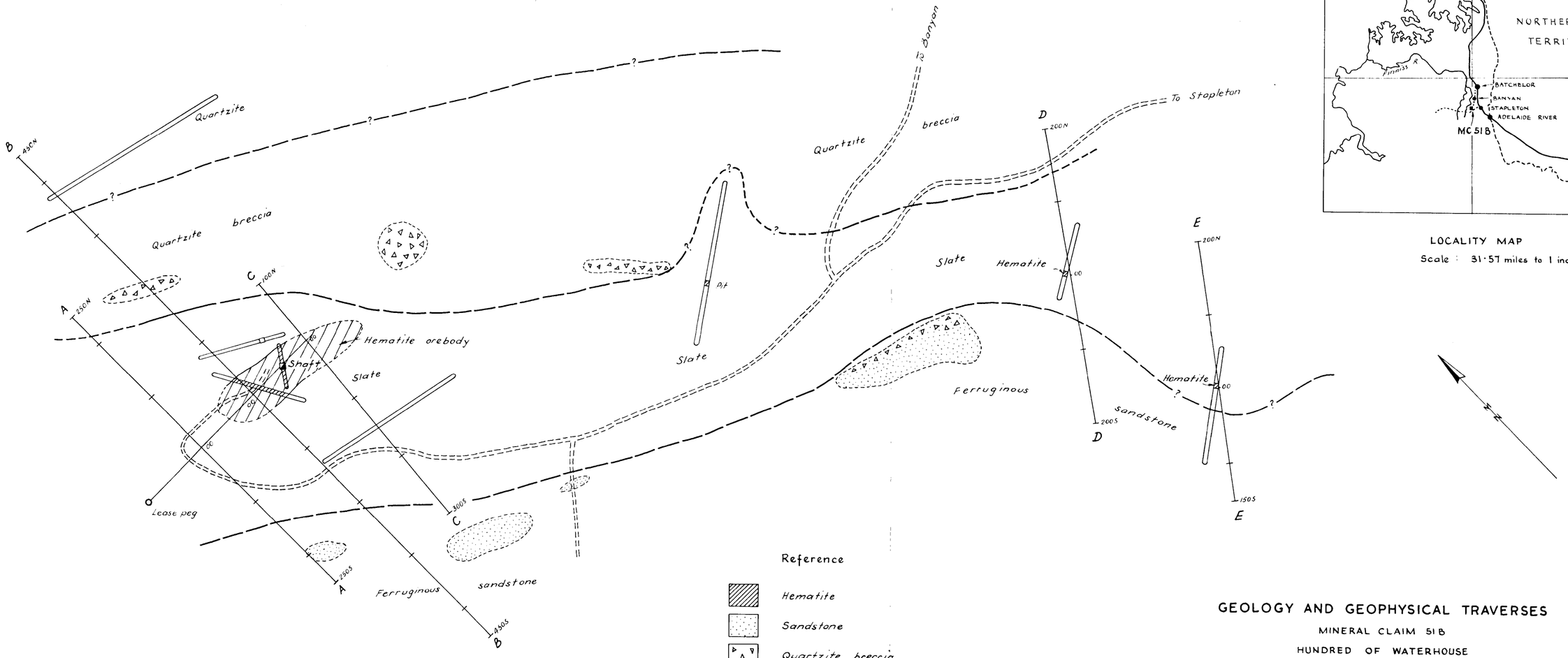
Assuming that other iron deposits which may occur in the area are of a similar type and size it must be concluded that the magnetic method is unsuitable for further prospecting and that a full-scale survey of the locality is not warranted.

PLATE 1



LOCALITY MAP

Scale : 31·57 miles to 1 inch



Reference

- Hematite
- Sandstone
- Quartzite breccia
- Geological boundary
- Costean
- Vehicle track

GEOLOGY AND GEOPHYSICAL TRAVERSES

MINERAL CLAIM 51B

HUNDRED OF WATERHOUSE

N.T.

(Geology after Resident Geologists' Office, Darwin)

Scale

100 0 100 200 FT.

Bureau of Mineral Resources, Geology and Geophysics, Darwin, July 1961

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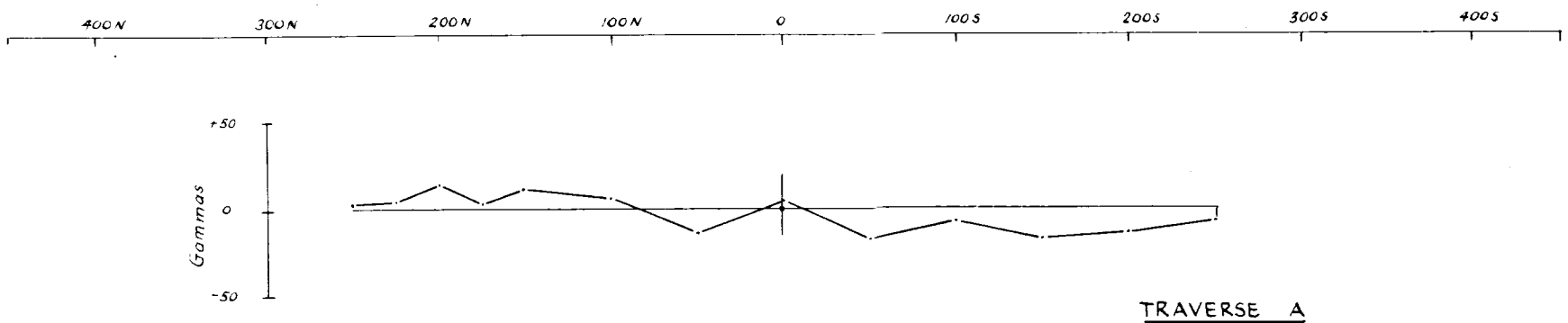
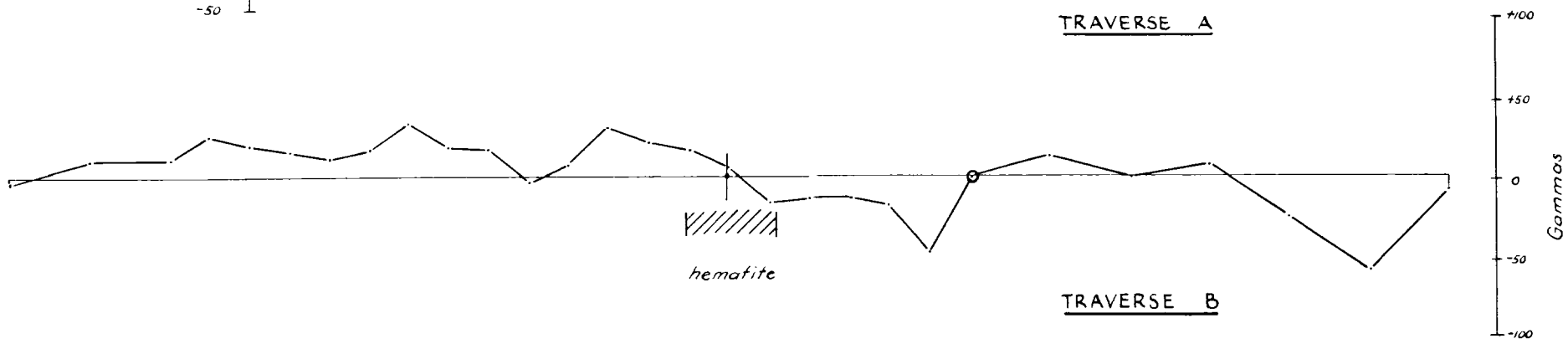
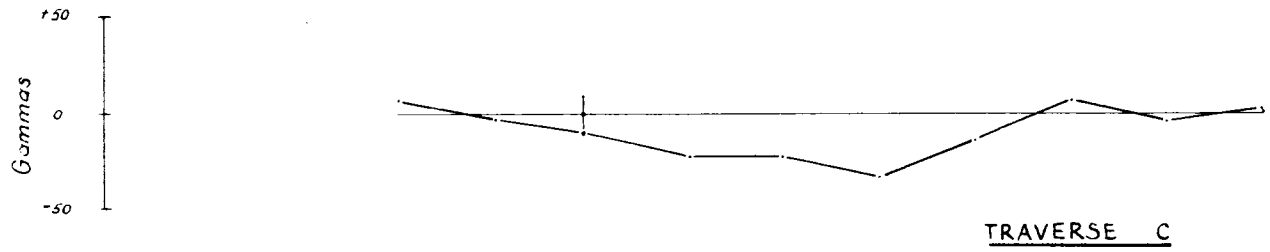


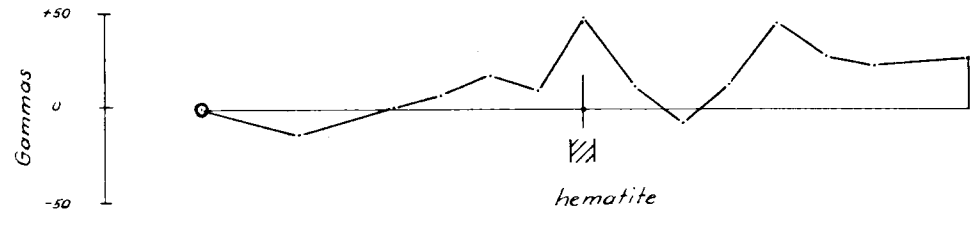
TRAVERSE A



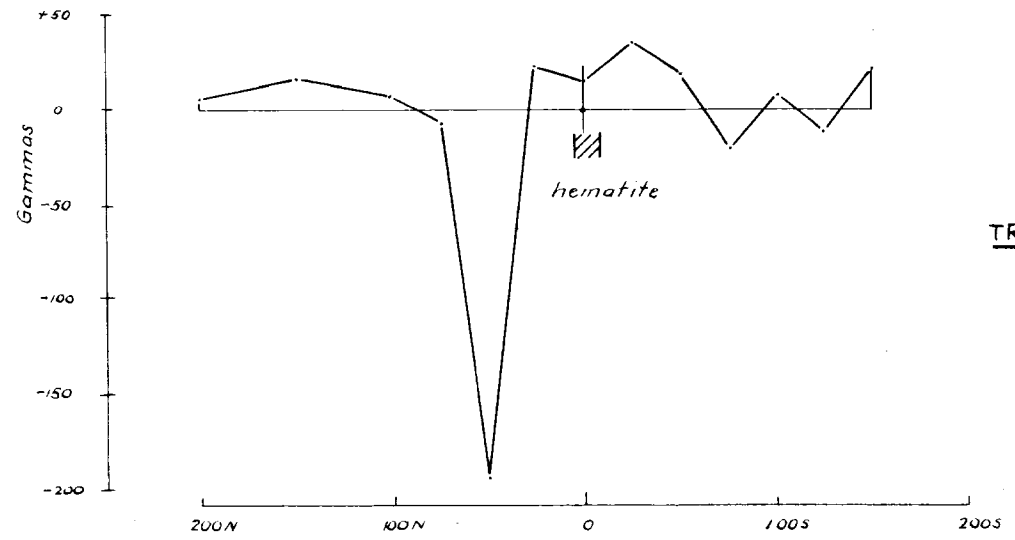
TRAVERSE B



TRAVERSE C



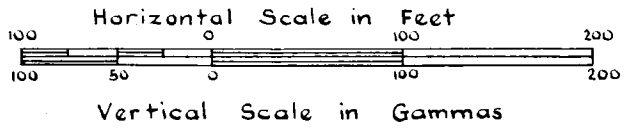
TRAVERSE D



TRAVERSE E

TEST GEOPHYSICAL SURVEY AT MINERAL CLAIM 51 B
HUNDRED OF WATERHOUSE, N. T.

VERTICAL MAGNETIC FORCE PROFILES



Bureau of Mineral Resources, Geology and Geophysics, Darwin, July 1961

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