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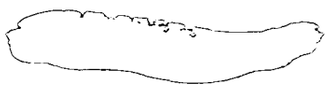
COMMONWEALTH OF AUSTRALIA



DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS.

RECORDS

1955, No. 78.

PRELIMINARY NOTES ON RESULTS OF GEOPHYSICAL SURVEY AT CARCOAR, N.S.W.

by

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PRELIMINARY NOTES ON RESULTS OF GEOPHYSICAL SURVEY AT CARCOAR, N.S.W.

An area surrounding the Carcoar cobalt deposits, extending from 2000N to 1000S, and 1000W to 1400E, has been surveyed by magnetic, electromagnetic and self-potential methods. The self-potential method gave no indications. Very definite indications were obtained by magnetic and electromagnetic methods, and it is considered that the results will be of considerable assistance in elucidating the geology of the area.

The Carcoar cobalt deposits consists of small lenses, lying in slates, near the contact of the slates with a diorite mass.

The main feature of interest in the magnetic results is the marked change in conditions between the northern and southern portion of the layout. At the northern end, the magnetic intensity is generally high and disturbed. Over the southern portion, the intensity is low and undisturbed, except for a line of minor anomaly extending from 500N/900E to 1000S/100W. The cause of the minor anomaly is not known at present. The high intensity at the northern end can be reasonably assumed to be due to the diorite. On this assumption the contact between diorite and slates would roughly follow the 250 gamma contour. This does not agree with the boundary shown on the geological maps. Trenching of electromagnetic indications, recommended later, will enable the position of the contact to be checked in certain areas.

Indications varying from weak to strong were obtained by the electromagnetic method. These lie on lines which have two main directions, one roughly north-north-west and the other north-north-east, with a few of the indications lying on lines bearing almost due north. Old workings generally lie close to one or other of these lines. It is reasonable, and consistent with geological mapping, to suppose that these lines of indication are due to shears. The wide variation in intensity of the indications shows that considerable differences in electrical conductivity must exist between different parts of the supposed shear zones. It is possible that the conductivity of the shear zone is an indication of the degree of mineralisation, but this must be checked by trenching or drilling.

To provide a basis for detailed interpretation, it is recommended that the electromagnetic indications be tested by trenching. Sites for twelve trenches are shown on one of the enclosed sketches. It is suggested that the trenches be cut with a bulldozer and carried to solid rock. After cutting, the trenches should be geologically examined and tested with a Geiger counter. It is suggested that samples for geochemical testing be taken along each trench. Further exploration should be considered on the basis of the results of the trenching.

Results indicate that magnetic and electromagnetic methods may be particularly well suited to exploration in this area. If the testing of the present indications reveals any useful mineralisation, the survey could be extended with possible advantage.

Two sketches are enclosed, one showing magnetic vertical force contours and lines of electromagnetic indications, at a scale of 200 feet to an inch. The other, at a scale of 100 feet to an inch, shows details of electromagnetic indications and the position of the trenches recommended.

September, 1955.

SCALE IN FEET

100 — 0 100 200 300

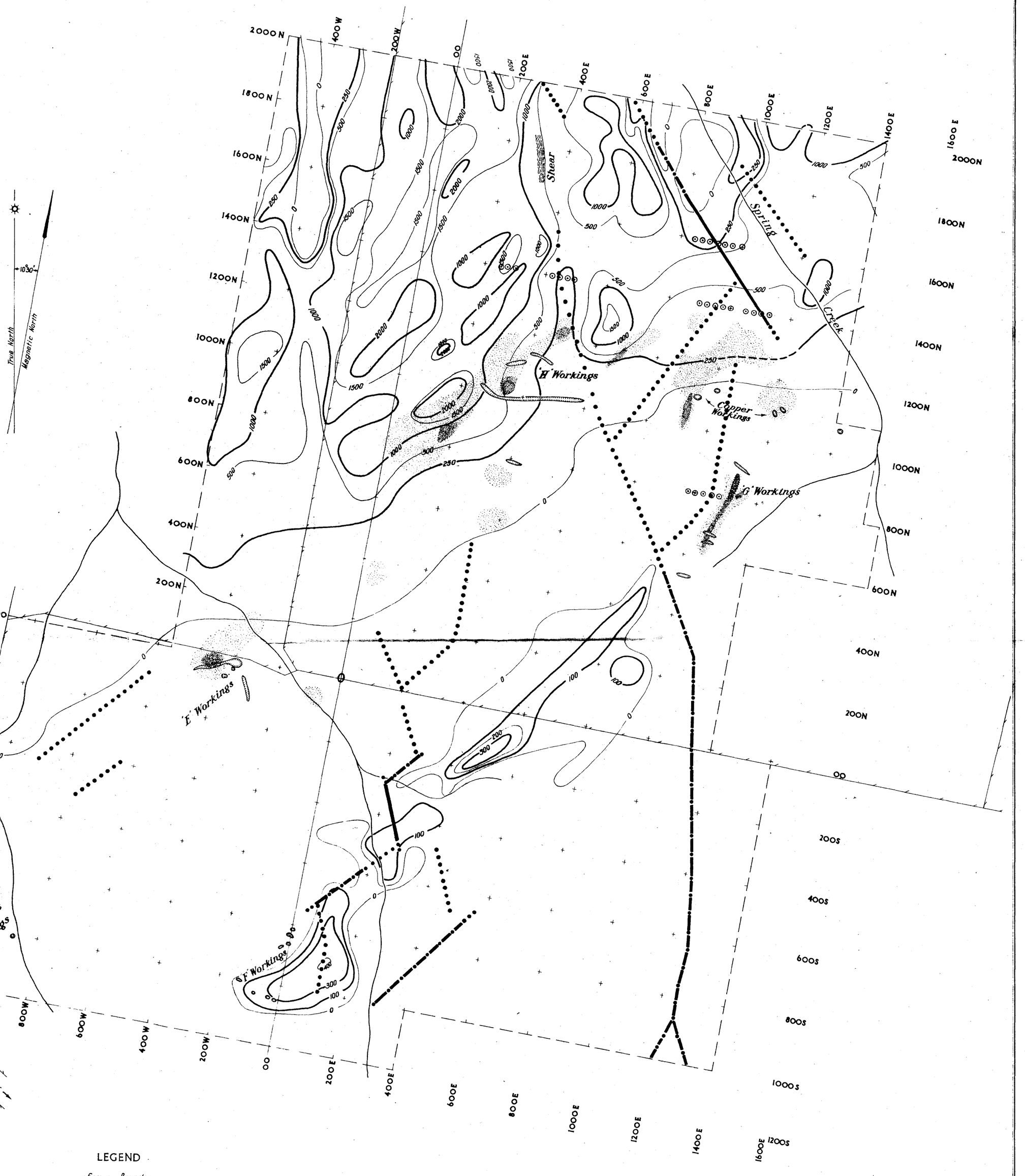
Recommended Trenches

GEOPHYSICAL SURVEY AT COBALT WORKINGS. CARCOAR N.S.W.

TURAM RATIO CONTOURS

G 41-10

Geophysical Section, Bureau of Mineral Resources, Geology & Geophysics



LEGEND

- Survey Boundary
- Magnetic Contours
- Electromagnetic Indications: Very Weak, Weak, Medium, Strong
- Radiometric Anomaly (Rayner & Ralph)
- Geochemical Sample
- Fence

GEOPHYSICIST

GEOPHYSICAL SURVEY AT COBALT WORKINGS,
CARCOAR, N.S.W

GEOPHYSICAL INDICATIONS

SCALE IN FEET

200 0 200 400 600 800 1000

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