

1950/43  
C

Geophysical  
5

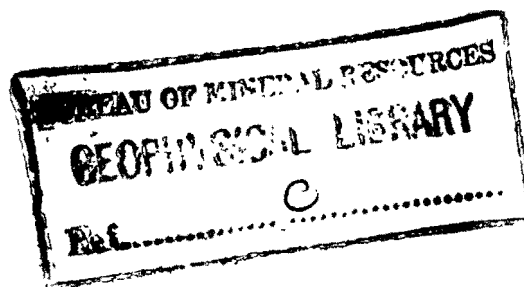
MINISTRY OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES  
GEOLOGY AND GEOPHYSICS



RECORD NO. 43/1950

REPORT ON

# RADIOMETRIC INVESTIGATIONS ON THE SUNNYSIDE GOLDFIELD



by

J. DALY

1950/43  
C

MINISTRY OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES  
GEOLOGY AND GEOPHYSICS

RECORD NO. 43

REPORT ON

**RADIOMETRIC INVESTIGATIONS  
ON THE  
SUNNYSIDE GOLDFIELD**

*by*

*J. DALY*

# REPORT ON RADIOMETRIC INVESTIGATIONS

## ON THE SUNNYSIDE GOLDFIELD

### INTRODUCTION

During May, 1950, a sample of granitic material obtained from a dump on the Sunnyside goldfield, and showing a few flakes of a green mineral similar in appearance to torbernite, was forwarded to the Department of Mines, Melbourne, by a miner working on that field.

The Mines Department tested the mineral and proved that it was uranium-bearing, and submitted a sample to the Bureau to test for radioactivity. After confirmation of the presence of radioactivity in the sample by laboratory tests, a brief visit was paid to the field by a party from the Geophysical Section. The party consisted of two geophysicists, and was accompanied by Mr. P. Crohn, geologist of the Department of Mines. One day was spent for conducting tests on the field. The opportunity was taken of visiting the Maude and Yellow Girl mine, and testing ores and concentrates for radioactivity.

### THE SUNNYSIDE GOLDFIELD

The Sunnyside Goldfield is about 6 miles north of the Glen Wills hotel and the mines lie on the upper slopes of Mt. Wills. No mining operations have been carried out for many years. At present, a small battery operates during the summer months, crushing stone from the old dumps; Work is impracticable during the winter due to snow. Workings are mainly collapsed and the mines cannot be entered for investigation.

The positions of the mines, and the general geology are shown in the map attached, which has been traced from a sketch supplied by Mr. Crohn of the Department of Mines, Melbourne. It is understood that all leases on the field are held at present by the Maude and Yellow Girl Gold Mining Co.

### TECHNICAL DETAILS

Tests were made on most of the dumps and on outcropping rocks near the workings. Particular attention was paid to the Gentle Annie dump, from which the original sample was obtained, and to the neighboring Star of the West and Meerschaum dumps. The tests were made using portable Geiger Muller ratemeters, manufactured by Austronic Engineering Laboratories.

### RESULTS

No high readings indicating any concentration of radioactive minerals were observed. Readings of twice to  $2\frac{1}{2}$  times normal background were obtained generally on the Star of the West, Gentle Annie and Meerschaum dumps and on outcropping granite. The readings on dumps and outcrop lower down the mountain to the east decreased gradually, being very little above normal background on the Livingstone and Mt. Moran dumps. (The term "normal background" is used to indicate the reading of the instrument in an area where the surrounding rocks are completely non radioactive).

A careful search was made on the Gentle Annie dump for specimens showing visible radioactive minerals. Two pieces only of granitic material were obtained each showing a minute speck of a green mineral similar in appearance to torbernite.

No evidence of activity was observed on mill feed or concentrates at the Maude and Yellow Girl Mine.

## CONCLUSIONS AND RECOMMENDATIONS

(1) Readings indicate the presence of a trace of radioactive minerals in the Mt. Wills granite. The observed activity is consistent with a uranium content of 0.01% and less. Activity observed over the sedimentary rocks is in all cases less than that over the granite, and decreases with increasing distance from the contact of granite and sediments.

(2) No evidence was found of the occurrence of any areas with higher concentrations of uranium minerals. Readings on the dumps show clearly that no body of ore of significant uranium content was broken during mining operations.

(It may be noted that the occurrence of minute flakes of torbernite has been observed in similar geological conditions in other parts of Australia).

(3) It is not considered that any further investigation of this area as a possible source of radioactive minerals is warranted. It is recommended, however, that the occurrence be brought to the notice of the Maude and Yellow Girl Mining Co., so that a watch may be kept for uranium minerals in the event of any further mining development being undertaken on the field.

## ACKNOWLEDGEMENTS

It is desired to acknowledge the assistance of the officers of the Department of Mines, Melbourne, and in particular of Mr. P. Grohn who accompanied the party in the field, and supplied the information shown on the map attached.

(J. DALY)  
Geophysicist.

