COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.

BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

1955/63

REPORT ON AN INSPECTION OF A URANIUM FIND ON PANDANUS CREEK, NORTHERN TERRITORY.

by

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GENERAL INFORMATION

This area was inspected between 21st and 25th May, 1955. The locality of the Leases is on the headwaters of the Pandanus Creek, which flows into the Nicholson River approximately 7 miles west of the Northern Territory-Queensland border.

The tracks are poorly defined or non-existent as one approaches the prospects from Doomadgee Mission. Unless one is prepared to navigate from air-photos and search for suitable "jump-ups" to traverse the numerous ridges, it is advisable, until more traffic has been through, to arrange with the prospectors to supply a guide from Doomadgee Mission onwards. The landrover used on this inspection was the first motor vehicle to reach the copper prospect (leases 1 to 5), but it was necessary to use horses to visit the other leases. Normally the prospectors use horses from Doomadgee Mission into their base camp (distance of some 80 miles) at the head of Gorge Creek, and horses to prospect over the upper reaches of Pandanus Creek.

Mr. R. T. Norris has been prospecting in the area since 1953 and had pegged five leases (Nos. 1 to 5) for copper. He sent 5 tons of copper ore to Port Kembla from this area.

On 5th March, 1955, Mr. R. T. Norris located radioactivity on Lease 5. Mr. Norris, his wife and brother have continued prospecting the area and have located several small occurrences of radioactivity and uranium mineralization. On 14th March, 1955, Mrs. Norris located radioactivity on Lease 11, which is claimed to be more than 5 miles from the original find.

The prospectors were not familiar with the principles of uranium occurrences and prospecting methods. They were given guidance and advice on these matters.

GENERAL GEOLOGY

The area over which the radioactivity has been located consists of Lower Proterozoic acid and some basic volcanics intruded by granite. These are overlain unconformably by flat-dipping conglomerates, grits and sandstones, which probably belong to the Upper Proterozoic. These latter rocks form a scarp to the north-east of Lease 11 and the top of mesas such as Tracey's Table.

The Lower Proterozoic rocks are intruded along fault zones by quartz, with which is associated the copper and uranium mineralization.

RADIOACTIVITY

Lease 1.

This is the most northerly of a line of leases (1 to 5) which has been pegged on a long quartz intrusion along a fault

line. The quartz strikes 110°, dips 65° to the west and varies in width up to 25 feet. Where fractures in the quartz are hematised, counts of 2 to 3 times background are found, but these increase to 10 to 15 times on several isolated boulders. The radioactivity occurs only on the occasional fracture faces.

The area surrounding the quartz is mainly soil-covered, but acid volcanics are evident further away.

Lease 2.

The quartz reef extends southwards through this Lease, where on the south-western side copper mineralization occurs and further to the south-west is granite. On the north-east side of the reef are acid volcanics and some basic volcanics are found further in that direction.

Several pot-holes have been sunk, which show secondary copper mineralization over 10 to 12 feet. Further to the south the copper lode moves away from the hanging wall of the reef.

A small pot-hole on the north-east side of the quartz reef gives counts up to 10 times background. A hematized boulder removed from this hole shows uranium mineralization in the form of autunite on one side with a count of 2,500 counts per minute, while on the other side the count is only 300 per minute.

Occasional hematized fractures along the reef give counts from 2 to 4 times background.

Lease 3.

The reef continues through this lease and the copper returns to the hanging (S.W.) wall near the southern boundary, where several costeans and holes have been sunk and approximately 15 tons of copper ore have been stacked. A grab sample taken by the prospector assayed 27.8% copper. In these holes counts up to 5 times background are obtained.

Lease 4.

A small open cut (12' x 6' and 6' deep) near the northern boundary of this lease shows secondary copper over a width of 12 feet and gives counts of 5 to 10 times background. Two small spots with a trace of torbernite give 20 times background. The dump of copper core from this hole, which is on Lease 3, gives an average count of 5 times background.

A specimen collected from this open-cut assayed 0.027% eU_3O_8.

Lease 5.

This is the most southerly lease of the line on this quartz reef, which ends on this lease. Near the southern end of the reef a small pot-hole (18" deep) gives counts up to 100 times background and boulders from this hole show yellow autunite and green torbernite mineralization. The high count is confined to this pot-hole, which is the site of the original find of radioactivity by R. T. Norris. Although a count of 5 times background can be followed for 20 feet to the north of this hole along the west side of the reef, it extends only 6 to 12 inches.

Along the reef which is 6 to 8 feet wide occasional spots can be found with counts of 2 to 5 times background, where there are hematized fractures. These counts are caused by the film of hematised material on the fractures and are of no economic importance.

A specimen sample collected from the pot-hole on this lease assyed 0.384% eU308.

Lease 6.

Leases 6, 7 and 8 are situated 35 chains west of the group of leases 1 to 5, shown in Plate I.

The radioactivity in this area occurs in silicified bands, which cut through reddish acid volcanic rocks. This silicification of acid volcanics produces a rock which in small specimens resembles the silicified limestone breccia (SLB) of the South Alligator River area when mineralised and hematized.

Occasional hematized spots along this silicified band give counts up to 5 times background. One spot was found showing 30 times.

Lease 7.

The silicified band extends from lease 6 into Lease 7, and in a pot-hole approximately 5 chains from Lease 6, uranium mineralization occurs over about 4 square feet. A count of 40 times background can be obtained and autunite and torbernite is present.

A specimen sample collected from this pot-hole assayed 0.101% eU308.

Lease 8.

Several small silicifed bands and quartz reefs give counts of twice background which occasionally rise to five times.

Lease 9.

The position of this Lease is shown in Plate I.

Along a quartz reef, striking 360° and cutting through rhyolite, can be found a few small spots giving counts of 2 to 3 times background on hematized fractures. On one fracture a count of 15 times was observed.

Lease 10.

On this lease, the position of which is shown in Plate 1, is another quartz reef striking 360°. Several hematized quartz boulders give counts up to 30 times background. Elsewhere an occasional count of twice background can be located.

A specimen sample from one of the boulders assayed 0.116% eU308.

Lease 11.

The position of this Lease is shown in Plate I. Near the western end of this Lease there is a small area (approximately 20 feet in diameter) of hematized altered sedimentary rock, which gives counts up to 20 times background. Further east, boulders of a similar rock, giving a similar count are found.

A specimen sample of this rock assayed 0.027% eU308.

Lease 12.

Lease 12 and 13 (see Plate 1) are pegged along a quartz reef which varies from 345 to 360° in strike and dips almost vertically. The reef cuts through acid volcanics and granite.

On Lease 12 counts between 5 and 10 times background extend over a length of 100 feet. One portion of this section gives counts of 65 times over a length of 6 feet and width of 15 to 18 inches, and another portion gives 100 times over a length and width of 2 feet. Both portions are highly hematized with autunite showing.

A specimen sample from this portion assayed 0.273% eU3O8.

Lease 13

The reef on this Lease gives counts up to 5 times background on several spots in hematized fratures. One small pot-hole has turned up a hematized quartz boulder which counts 20 times background, but no mineralization is visible.

The prospectors have located several spots in the Pandanus-Gorge Creek area, where counts of 2 to 5 times background are found, also several minor occurrences of copper mineralization The radioactivity is usually on hematised fractures of quartz reefs or veins, while the rhyolite and granite in places give an above background count.

FUTURE PROSPECTING

The occurrences of radioactivity along hematized fractures in quartz reefs do not warrant further work. Future detailed prospecting should be concentrated on Leases 1 to 5, where uranium mineralization is associated with the copper. There appears to be a considerable quantity of secondary copper ore available for extraction.

Costeaning and pitting are recommended on the leases where uranium minerals are visible, i.e. Lease 7 and 12, and also on Lease 11.

Regional prospecting should be done particularly along the W.N.W.-E.S.E. regional faults which show on the aerial mosaic (Calvert Hills, 4 miles to an inch). Leases 1 to 5 are on one of these fault-lines. The most economical method of prospecting would be with a scintillometer mounted in a small aircraft, which would designate areas worthy of ground investigations.

CONCLUSION

A new area of uranium mineralization has been located, which warrants further prospecting. Due to the isolated nature of the area it will be necessary to locate sufficient ore to warrant a treatment plant or one of sufficiently high grade to cover the high cost of transport.

The prospectors concerned have worked under isolated and difficult conditions to locate this uranium mineralization, and, although no large quantity of ore has been found yet, it is recommended that they be rewarded for their efforts.

18th June, 1955.

PLATE 1

310' 15 MILE YARD
350'
365'
Moonlight Spring
408'
412'
QUIRUM YARD
489'
Quirum Spring
740'
798'
1045'
895'
Calvert R.
NMH 102
844'
"SEIGALS CK."
Seigals Ck.
Agnes Ck.
o 11
1 2 3 4 5 6 7 8 9
o 12
o 13
o 9
o 10
Pandanus Ck (?)
528'
517'
TI TREE SPR
490'
438'
NMH 101
499'
P.W.H.
482'
622'
593'
Tin Hole Ck (?)
Fish River
FISH RIVER
Nicholson River

281
280
79
78
77
76
75
274000yN
18°00'
138°00'
630000yE

57 58 59 60 61 62

Tracing of controlled mosaic by National Mapping Section, Dept of the Interior, Canberra, A.C.T. - November 1951.
Compiled from an air photo mosaic which has been adjusted to astronomical stations

CALVERT HILLS SHEET – 4 MILES TO AN INCH

showing approximate positions of leases (•10)

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