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REPORT ON AUTHORITY TO PROSPECT NO. 3212, NORTHERN TERRITORY

by

GEOLOGICAL EXPLORATION & MANAGEMENT PTY. LIMITED

NOVEMBER 8, 1971

OPEN FILE
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FIGURE 1    LOCALITY MAP
FIGURE 2    AUTHORITY TO PROSPECT MAP

(i)
November 8, 1971

UNITED SALES INTERNATIONAL PTY. LTD.

REPORT ON AUTHORITY TO PROSPECT NO. 3212
NORTHERN TERRITORY

1. INTRODUCTION

An examination of available literature pertinent to Authority to Prospect 3212 was made by staff of Geological Exploration & Management Pty. Ltd. in Sydney; this firm also conducted a search in Darwin to ascertain the current Mineral Leases held within the area. The results of these investigations are summarised below.

2. LOCATION AND ACCESS

Authority to Prospect 3212 contains an area of 60 square miles and is centred approximately on Edith River Siding, some 30 miles north of the township of Katherine. The sealed Stuart Highway between Darwin and Katherine traverses the centre of the property, and the North Australian Railway is approximately parallel to the highway. Numerous secondary roads and tracks also cross the area. Katherine is served regularly by the two major Australian domestic airlines, and air charter services are also available from this centre.

3. TENEMENT DETAILS

Authority to Prospect No. 3212 has been granted to United Sales International Pty. Ltd. for a period of twelve months, commencing on 13th September, 1971.

4. DETAILS OF MINERAL LEASES

Other parties hold three leases (Nos. 184D, 185D and 186D), each of 40 acres, within Authority to Prospect No. 3212. Details of these leases are given on the attached Search Certificates Nos. 4253, 4254 and 4255.
5. REGIONAL GEOLOGY

The oldest rocks exposed are strongly-folded and sheared siltstone and greywacke of the Lower Proterozoic Burrell Creek Formation. These rocks occupy narrow belts on the eastern and southern margins of the area, and they have been intruded by the Lower Proterozoic Cullen Granite which underlies about 80 per cent of the Authority to Prospect. It crops out strongly in some parts but poorly in others, and consists of several types of granite, and includes some syenite.

Numerous greisen, aplite and quartz veins cut both the Burrell Creek Formation and the Cullen Granite. Jones (1953) reported Cambrian arkosic sandstone overlying the Cullen Granite about a half-mile west of Tennysons No.1 uranium prospect, but these Cambrian sediments are not shown on published regional geological maps.

6. ECONOMIC GEOLOGY

No mineral deposits are currently worked within Authority to Prospect No. 3212. A few prospecting pits for tin and wolfram were sunk in the past, but the main interest in the area has centred on uranium mineralisation.

Several uranium prospects within the Cullen Granite were discovered in 1952, and some were subsequently mapped by officers of the Bureau of Mineral Resources (Fisher, 1952; Jones, 1953), and two were drilled (Firman, 1954). The known prospects are:

(a) The YMCA Prospects, located 1-3 miles south-southeast of Edith River Siding;
(b) Tennysons Prospects, 2-4 miles west-southwest of Edith River Siding;
(c) Hore and O'Connor's Prospect, 5 miles west-northwest of Edith River Siding;
(d) Yenberrie Prospect, 5 miles north of Edith River Siding.
All of these prospects are located on steeply-dipping shear zones which strike generally northwest, and in the case of the YMCA Prospects, which have been examined in detail, the best values of uranium mineralisation occur at and near the intersections of northeast striking shear zones with the (main) northwest zones. Secondary uranium minerals - torbernite and meta-autunite - occur disseminated in association with hematite and apatite; individual deposits are small, ranging up to 25 feet long and 18 inches wide, and the surface grade has been estimated as ranging from 0.1 to 0.2 per cent.

Two deposits of the YMCA Prospects were tested by diamond drilling; in each case, one hole tested the oxidized zone and one sought primary ore at depths of about 250 feet below the surface. All holes were logged radiometrically, and no significant increases in grade of mineralisation were detected.

7. CONCLUSIONS

1. Uranium mineralisation occurs within Authority to Prospect No. 3212, but the investigations conducted in the early 1950's showed that the known prospects were not of economic grade. These investigations included geological mapping, radiometric gridding, diamond drilling, radiometric logging and the sinking of a few shallow shafts.

2. The disseminated nature of the uranium mineralisation does not provide good drilling targets, and the four diamond drill holes at the YMCA Prospects do not disprove conclusively the possibility of economic deposits.

8. RECOMMENDATIONS

1. To search for other uranium prospects, a photo-geological study should be made, to locate areas where intersecting shears are evident; such areas should then be examined radiometrically on the ground.

2. As an alternative to (1), conduct a low-level airborne radiometric survey, and follow this with a ground examination of anomalous areas.
3. Seek areas of Cambrian and late Proterozoic sediments unconformable on the Cullen Granite, and test them for sedimentary deposits of uranium.

GEOLOGICAL EXPLORATION & MANAGEMENT PTY. LIMITED

K.G. Smith

KGS/mt
# APPENDIX A

(See Lease Plan)

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Note: 43, 100 and 104 are Government Reserves.
APPENDIX B

SELECTED BIBLIOGRAPHY


Northern Territory, Australia

Key
1. ATP 3212.
2. ABC uranium prospect.
3. Old Mines Nabarlek prospect.
4. Pancontinental Areas.
5. Peko-EZ Areas.
6. Rum Jungle.
7. El Sharana.

SCALE
100 50 0 100 200 Miles.