ANNUAL REPORT

FOR PERIOD

11.05.82 to 10.05.83

E.L. 3484

C.R. TOWNSEND
P.O. BOX 39332
WINNELLIE N.T. 5789

CR83/182

INTRODUCTION

E.L. 3484 was granted to Charlie R. Townsend, effective the 11th May, 1982 for a period of six years. The area concerned lies on the western margin of the Pine Creek Geosyncline and contains potential for tin, tantalum and tungsten mineralization of the Finniss Mineral Field type, associated with granitic and pegmatitic rock of probable Carpentarian age.

Exploration activities, during the 1982 dry season have included reconnaissance vehicle and foot traverses, rock and panned concentrate sampling, in this area bordering the Wagait Aboriginal Reserve and contiguous with E.L. 3288 to the north.

LOCATION AND ACCESS

E.L. 3484 is accessible from the partly sealed main Darwin - Bynoe road via Berry Springs and taking the graded Woolaning Homestead road at the turn-off six kilometres past Tumbling Waters. This graded road is generally accessible to four wheel drive vehicles throughout the wet season except for some local flooding at main drainage crossings. Approximately 41 kilometres after the Bynoe road turn-off, via Mount Finniss and the Bamboo Creek/Finniss Range Pass, the Woolaning Homestead is reached. Five kilometres past Woolaning Homestead on the road to Wangi a left turn is taken to McCallum Creek which transects the northern part of E.L. 3484. This formed road, and some fence line tracks provide ready access to the E.L. area.

TOPOGRAPHY AND VEGETATION

The area is drained by McCallum Creek, a tributary to the westerly flowing Finniss River. Topography is generally flat to slightly undulating with elevations varying between 35 metres and 45 metres above sea level.

Vegetation consists of low level species with mixed scrub or Eucalyptus trees in well drained areas with Melaluca and Pandanus species fringing waterholes and in black soil areas.

CLIMATE

Northern Australia monsoonal climate exists with average annual rainfall exceeding 1500mm and the majority of precipitation occurring between November and May. Temperatures may range from a low in July of $2^{o}C$, to a maximum of $+40^{o}C$ in November/December.

PREVIOUS WORK

E.L. 3484 lies in the north western quarter of the Reynolds River 1:100,000 Sheet No. 5071 Topographic Series.

Geological mapping of the area is covered by the 1:500,000 Pine Creek Geosyncline Sheet and the 1:250,000 Pine Creek Sheet, although the stratigraphy and interpreted geology as shown on these maps is currently under review by the N.T.G.S. in the preparation of the Reynolds River 1:100,000 Geological Series map.

Airborne radiometric and total magnetic intensity surveys were flown over this area by the N.T.G.S. in 1980 to produce 1:100,000 and 1:250,000 contour maps. In addition, 1:500,000 B.M.R. gravity, magnetic and radiometric contour maps compiled from previous data, cover the area of interest.

Regional exploration by A.O.G. Minerals Pty Ltd for uranium, and B.H.P. for base metals in the Litchfield Province covered adjoining areas to the north and south of E.L. 3484. More recently, Otter Exploration N.L. held E.L. 2040, a large area covering E.L. 3484 where the target commodity was uranium.

Alluvial and elluvial tin, tantalum, tungsten and gold were mined from the nearby Finniss River mineral field, classified as vein-type deposits by Needham and Roarty (1980) with an extracted total value in 1978 terms of $A3.973 million. Pickets, Annie, Lucy and numerous other mines and diggings of the Finniss River type deposits exist approximately 40 kilometres north-east of the E.L. area.

GEOLOGICAL SETTING

E.L. 3484 lies within the Litchfield Block and contains probable Archaean basement rocks, which have undergone medium to high grade metamorphism, extensive granitization and probable faulting.

Unconformably overlying the basement complexes to the east are Lower Proterozoic flysch deposits (siltstone, greywacke) of Burrell Creek Formation in the Finniss River Group, which have undergone weak metamorphism. Burrell Creek metasediments comprise the prominent range strike north-south and marking the eastern boundary of the adjoining E.L. 3288.

Carpentarian pegmatitic dykes intrude the basement areas hosting tin, tantalum and tungsten mineralization in structurally disturbed zones.

EXPLORATION ACTIVITIES

The primary aim of the first years activities was to regionally evaluate the potential for the existence of alluvial and elluvial Sn, Ta, W and Au deposits. The E.L. adjoins E.L. 3288 to the north and consists of a group of 4 E.L.s in this province currently held by C.R. Townsend. Due to the extensive areas involved, systematic exploration work was not undertaken however, areas of perceived potential were investigated using the following sampling techniques:

. Foot traversing of drainage patterns to sample areas of concentration for heavy mineral content. This involved bulk sampling (up to 30kg) and washing on site to produce a concentrate of approximately 0.1kg. Samples were then analysed.

. Auger drill hole sampling of drainage areas for mineral concentrations by drilling 50 metre spaced holes to a depth of 1.5 metres. Bottom hole samples described and sent for analysis.

. Costeaning of drainage areas for mineral concentrations, samples sent for analysis.

REFERENCES

Needham, R.J. & Roarty, M.J. An Overview of Metallic Mineralization in the Pine Creek Geosyncline I.A.E.A. 1980

Otter Exploration Final Reports on E.L. 2140 and 2141. D.M.E. Ref: CR 81/283-284

N.T.G.S. and B.M.R. Geological and Geophysical Mapping

ATTACHMENTS

LOCATION MAP

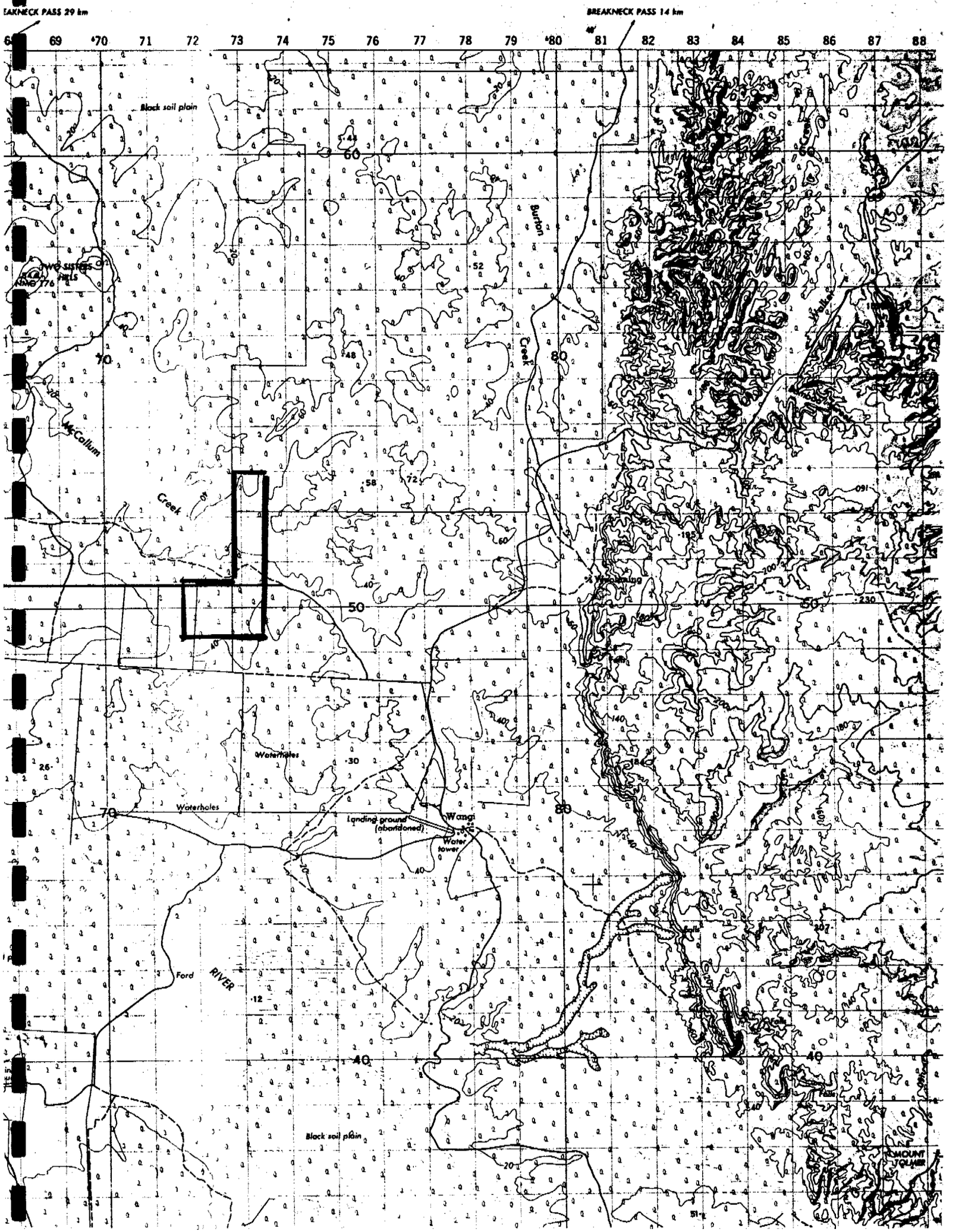
GEOLOGY/SAMPLE LOCATIONS

ASSAY RESULTS

EXPENDITURE FOR E.L. 3484

E.L. 3484

LOCATION MAPS


EAKNECK PASS 29 km
BREAKNECK PASS 14 km
Black soil plain
TWO SISTERS HILLS
KNOB 776
McCallum Creek
Burton Creek
Waterholes
Waterholes
Landing ground (abandoned)
Wangi
Water tower
Ford
RIVER
Black soil plain
MOUNT JOLIMO

E.L. 3484

GEOLOGY SAMPLE LOCATIONS

130°37'30"

12°52'30"

APg

Porters Creek

X A1

X A2

WAGAIT ABORIGINAL RESERVE

X A2,3

WAGAIT ABORIGINAL RESERVE

X CTS1

Walkers Creek

X RS1,2

RR X

APm

Burtons Creek

EL 3289

APg

X J7,12

X J12

J8,9,10,11 X

J4,5,6 X

CONNIE HILL SAMPLES WITH C PREFIX

J13,14 X

EL 3288

APm

Pu

Prd

WOOLANING

EL 3484

Klm APm

15°07'30"

130°37'30"

COSTEAN WA

COSTEAN WC SERIES

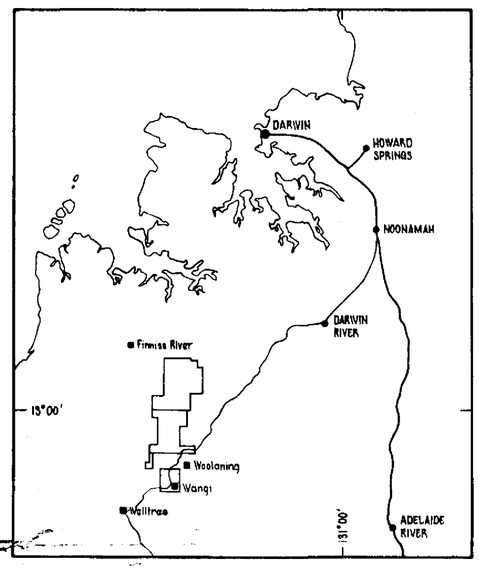
D LINE

M LINE

SOIL SAMPLING TRAVERSE

WANGI

EL 3483



LOCATION DIAGRAM

Scale 1:1 000 000

LEGEND

- EL. Boundary
- Fault
- Geological Unit Boundary
- Klm — Cretaceous Sediments
- Pu — Carpentarian Sandstone
- Prd — Burrell Creek Formation
- APg — Archaean/Proterozoic Anatectic Granite and Pegmatite
- APm — Archaean/Proterozoic Metasediments
- Costean
- X — Sample Site
- Magnetic High
- Magnetic Gradient (direction of increase ——)
- Stream Drainage
- Track

EL's 3288 3289 3483 3484

GEOLOGY AND SAMPLE LOCATIONS

PREPARED BY J. PEARSON FROM DATA SUPPLIED BY C.R. TOWNSEND. MAY 1983.

SCALE 1:50 000

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E.L. 3484

ASSAY RESULTS

AN.. ABS
A Division of Macdonald Hamilton & Co. Pty. Ltd.
ANALYTICAL CHEMISTS

• PERTH:
52 MURRAY ROAD,
WELSHPOOL, WESTERN AUSTRALIA, 6106
TELEPHONE (09) 458 7999, 458 7154
TELEX: ANALAB AA 92560
P.O. BOX 210, BENTLEY, W.A. 6102

13th June, 1983

R. Townsend
P.O. Box 39332,
WINNELLIE NT 5789

Job Reference No. 1000.0.01.28407

Mineralogical analysis
of heavy sand C. (1615 method).

R. TOWNEND

Sample C

The sand was examined in oils and in a polished briquette. A grain count was made of each and combined with density adjustments to give the result as follows in wt%:

Ilmenite	81.4%
Quartz	13.5%
Cassiterite	1.3%
Leucoxene/Rutile	1.0%
Tourmaline	1.2%
Zircon	1.0%
Others	0.6%

The ilmenite is mostly quite fresh. The cassiterite is discrete, and grainsize is rather variable.

EXPENDITURE E.L. 3484

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GEOLOGICAL SERVICES		$ 60.00
LABOUR COSTS	(0.8 man months)	2,400.00
VEHICLE DEPRECIATION	(20% P.A.)	450.00
EQUIPMENT DEPRECIATION	(10% P.A.)	330.00
ASSAYS AND ANALYSES		110.00
FIELD SUPPLIES		35.00
EQUIPMENT MAINTENANCE		128.00
FUEL AND OIL		95.00
TYRES		86.00
ACCOMMODATION/FOOD		55.00
MAPS/PUBLICATIONS		45.00
POSTAGE		1.00
FREIGHT COSTS		18.00
	SUB TOTAL	$ 3,813.00
OVERHEADS 5% of SUB TOTAL		190.65
	TOTAL	$ 4,003.65

Covenant $4,600