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MT ROMULUS EL 24/84

PROGRESS REPORT ON EXPLORATION FOR 12 MONTHS
TO 25 NOVEMBER 1986

OPEN FILE

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Date: 17 October 1986

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Accepted by:



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Tasmania

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1. SUMMARY

The potential for gold mineralisation within the Romulus EL (TASh 2696) has been recognised and target areas outlined (TASh 2827). The start up of a major field programme has been postponed pending improved helicopter availability in Western Tasmania. However, stream sediment and cyanide leach samples have been taken at all sites accessible by boat.

2. INTRODUCTION

EL 24/84, Mt Romulus, covers an area of 103 square kilometres between the western edge of the Cradle Mt-Lake St Clair National Park and Lake Mackintosh. The Licence includes a narrow belt of Cambrian sediments and volcanics sandwiched between the Precambrian Tyennan nucleus and Ordovician sediments. The area is rugged and heavily vegetated; helicopter access is required for most exploration within the EL.

The Licence was originally taken to re-examine the Cambrian volcanics and a belt of DIGHEM-EM anomalies believed to fall over these volcanics and to have been inadequately tested in the past. A comprehensive review of all previous exploration was undertaken and reconnaissance sampling of parts of the area was carried out using boat access. Due to the lack of availability of a Queenstown based helicopter, no intensive ground exploration has been undertaken to date during the current field season.

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3. CONCLUSIONS

The review of the drainage geochemistry, magnetics and EM available for the area, together with the described geology and brief field examination has downgraded the base metal potential of the Cambrian volcanics within the EL. No major geochemical anomalies have been located draining Cambrian catchments, the DIGHEM anomalies over Cambrian units have been tested sufficiently enough to rule out major Pb-Zn sulphide deposits and no prospective magnetic features have been identified. The potential for large Pb-Zn deposits within the Precambrian or Ordovician is even more restricted. These environments are well known for their numerous but very small mineral occurrences, but no exploration models for large deposits within them has been developed.

There is considerable gold potential over the entire area as yet largely untested. This potential rests upon some areas of gold anomalism in drainages, gossanous and/or brecciated zones with the Cambrian volcanics and an area of arsenic anomalism possibly associated with a Cambrian intrusive porphyry within Precambrian carbonaceous phyllites. An aeromagnetic anomaly in the south adjacent to the High Tor granite also requires testing (TASH 2741).

4. RECOMMENDATIONS

Follow-up, principally to test their gold potential is recommended over the following targets (TASH 2695):

- Fury River Au potential in an area of highly anomalous As, Pb, Ba (Cu, Zn) draining Precambrian sediments and Cambrian volcanics and intrusives

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- Ten Mile Creek Au anomalies draining a hematite stockwork zone in a Cambrian porphyry
- Sophia An unexplained DIGHEM anomaly, and gossan in Cambrian tuffs. Possible Au potential
- Mt Swallow Anomalous Au in a creek draining Cambrian volcanics and Precambrian sediments
- Romulus East Gossan with gold values within a breccia zone

The follow-up in all cases would include detailed sampling of drainages, mapping and rock chip geochemistry. Gridding will be required over the Ten Mile Creek prospect should early results give encouragement. In addition a thorough stream sediment and cyanide leach programme is required to test the potential of Ordovician rocks in the north of the EL for thin layer and disseminated gold mineralisation.

5. OUTLINE OF GEOLOGY
(TASH 2695)

To the south and south-east of the EL the metasediments (quartzites, schists and phyllites) of the Precambrian Tyennan block are intruded by the Devonian Granite Tor "batholith". Wrapped around this Precambrian/granite nucleus is a fairly condensed Cambrian and typical Ordovician suite forming a NE-SW striking belt, younging west away from the Precambrian.

The Cambrian consists of four major lithological/litho-stratigraphic units. Age relationships are uncertain but there appears to be a lower quartzite unit followed (?) by acid lavas and volcanoclastics with some fine sediments. There may be a diachronous relationship between the quartzites and volcanics or there may be two separate quartzite suites. Maximum width (approximate thickness) of the volcanics is about 1.5 km, but this narrows rapidly to both the NE and SW.

Within the Cambrian belt, and in the north totally occupying /replacing it, is an extensive and persistent unit of quartz-feldspar-biotite porphyry. Whether this is extrusive or intrusive is uncertain. A dyke of similar lithology has been found intruding into the basement Precambrian. The fourth possible Cambrian unit is a granite, possibly a dyke. This may actually be of Devonian age related to the Granite Tor batholith.

The Cambrian is overlain to the west by sandstones (Moina equivalents) and Gordon Limestone. These sediments, largely covered by fluvioglacial, underly all of the northern arm of the EL. Minor patches of Tertiary basalt also occur.

6. GEOCHEMISTRY

(TASH 2695)

To date a total of ten cyanide leach samples have been collected to test the Sophia, Mt Swallow, Alexandra Hills and Brougham areas. Additional sampling awaits helicopter access. No base metal anomalies have been identified, however one site draining the north of Mt Swallow returned 350 ppb Au from a -80 mesh sample. This site also returned the peak cyanide leach Au result to date, a disappointing 150 ppt. The results from five sites are awaited.

7. PRINCIPAL TARGETS FOR TESTING
(TASh 2695)

These have been identified from reviewing the previous exploration results and brief ground checking of various prospects.

7.1 Fury River

Originally selected because of DIGHEM anomalies, initial follow-up located Precambrian carbonaceous phyllites which explained the DIGHEM anomalies. Stream sediment sampling located highly anomalous Pb (270 ppm), As (55 ppm), Ba (5000 ppm) and lesser Cu (36 ppm) and Zn (450 ppm) from catchments draining the DIGHEM anomalies and the contact between the Precambrian and Cambrian acid lavas and tuffs. A Cambrian porphyry dyke intruding Precambrian sediments also falls within these catchments.

Soil geochemical anomalies (Pb and As), ground magnetic and Max-Min EM anomalies were located and attributed to carbonaceous phyllites. Virtually no Au assays were made. Volcanics were found to have high Ba and Zn up to 1100 ppm.

The As anomalies are reported as being not uncommon in the Precambrian of this area (though a review of stream sediment compilations does not confirm this). The Pb, Zn and Ba anomalism suggest Cambrian mineralisation, but the Granite Tor intrusion is another possible source.

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The possibility of Au mineralisation associated with the carbonaceous phyllites, the Cambrian volcanics or the Cambrian porphyry dyke has not been adequately tested. If rock, soil and stream sediment pulps (ex Shell) can be obtained they should be reassayed for Au to assess this potential.

7.2 Romulus East

Also followed up because of DIGHEM anomalies explained by carbonaceous phyllites. A "gossan" (14% As, 2.6% Pb, 2.3 ppm Au) within a breccia zone (100 x 10m) is silicified, chloritic phyllites. Some gold assays were done, but not an exhaustive coverage.

Further assays for Au are required if sample pulps are available from Shell.

7.3 Ten Mile Creek

Anomalous gold in creeks downstream of a hematitic stockwork zone (shown as 1500m x 250m on Shell plans) within Cambrian porphyries. No rock chip gold assays exist. Whilst the anomalies are quite distal to the stockwork it is feasible that fine gold, sourced in the stockwork, has accreted during migration downstream. The stockwork should be located and sampled in detail, gridding would be required.

8. LOCATION

Burnie	1:250 000 Sheet	SK55-3
Queenstown	1:250 000 Sheet	SK55-5

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9. KEYWORDS

Precambrian, metasediments, phyllite. Cambrian, volcanics,
 gossan, porphyry, tuff, schist. Ordovician, sandstone.
 Devonian, granite.
 Geochemistry, stream sediment. Gold.

10. LIST OF PLANS

<u>Plan No</u>		<u>Scale</u>
TASH 2696	EL 24/84 Mt Romulus Location Plan	1:500 000
TASH 2741	EL 24/84 Mt Romulus Aeromagnetics Total Magnetic Intensity Contours	1:50 000
TASH 2827	EL 24/84 Mt Romulus Geology Plan with Principal Prospects	1:50 000
TASH 2695	EL 24/84 Mt Romulus Sketch of Cambrian Geology and Principal Targets with Stream Sediment Results	1:25 000

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981010

Burnie

5 450 000mN

Waratah

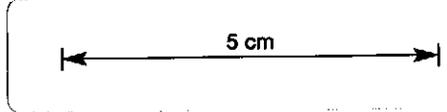
Savage River

5 400 000mN

ROMULUS
E.L. 24/84

Rosebery

Zeehan



400 000mE

5 350 000mN

Queenstown

Strahan

350 000mE

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ROMULUS
E.L. 24/84
LOCATION PLAN

REF.	SK55 - 3	(8015 - 8016)
SCALE	1 : 500 000	DRAWN R.T.
AUTHOR	I.M.C.	REPORT No. 14187
DATE	31 - 7 - 1985	PLAN No. TASH 2696

010

5 400 000mN

390 000mE

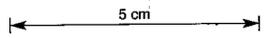
400 000mE

5 390 000mN

5 380 000mN



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86-2600

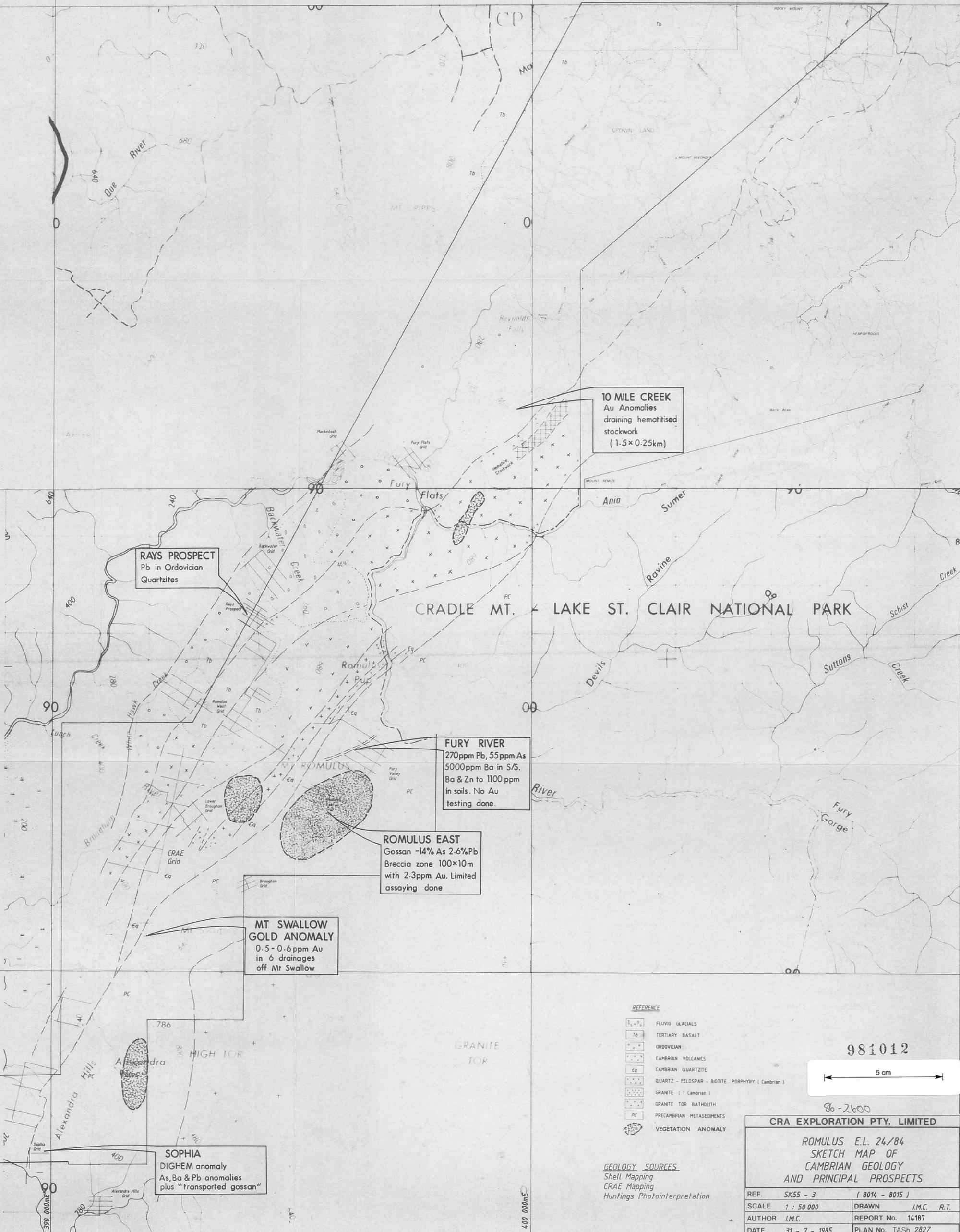
CRA EXPLORATION PTY. LIMITED			
MT. ROMULUS E.L. 24/84 DIGHEM II AEROMAGNETICS TOTAL INTENSITY CONTOURS (Enhanced Data)			
REF.	SK55 - 3	(8014)	
SCALE	1 : 50,000	DRAWN	ALCOA R.T.
AUTHOR	ALCOA I.M.C.	REPORT No.	14187
DATE	2 - 8 - 1985	PLAN No.	TASH 2741

5 400 000mN

011

5 390 000mN

5 380 000mN



REFERENCE

- FLUID GLACIALS
- TERTIARY BASALT
- ORDOVICIAN
- CAMBRIAN VOLCANICS
- CAMBRIAN QUARTZITE
- QUARTZ - FELDSPAR - BIOTITE PORPHYRY (Cambrian)
- GRANITE (? Cambrian)
- GRANITE TOR BATHOLITH
- PRECAMBRIAN METASEDIMENTS
- VEGETATION ANOMALY

GEOLOGY SOURCES

Shell Mapping
 CRAE Mapping
 Huntings Photointerpretation.

981012

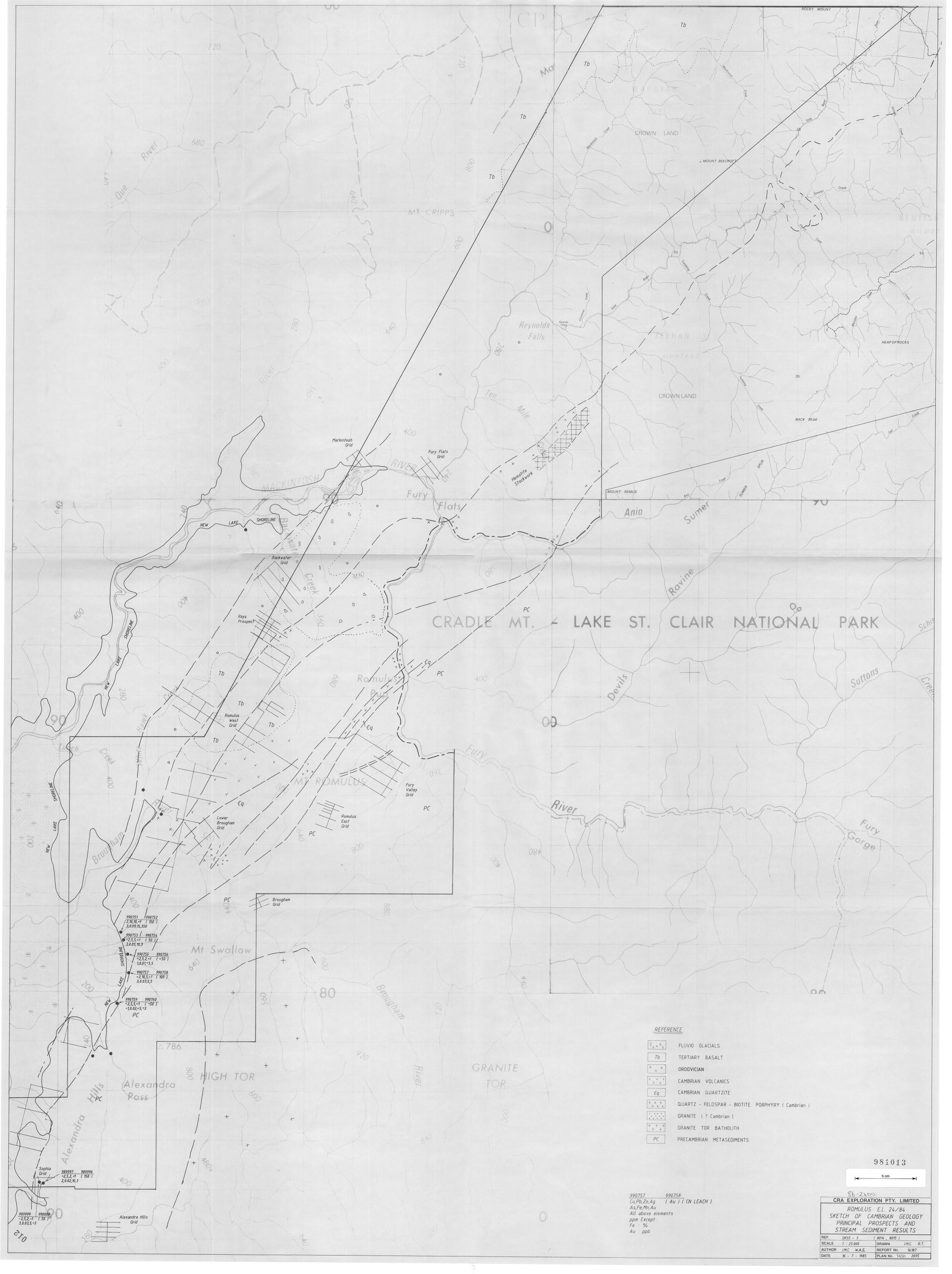
5 cm

86-2600

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ROMULUS E.L. 24/84
 SKETCH MAP OF
 CAMBRIAN GEOLOGY
 AND PRINCIPAL PROSPECTS

REF.	SK55 - 3	(8014 - 8015)
SCALE	1 : 50 000	DRAWN I.M.C. R.T.
AUTHOR	I.M.C.	REPORT No. 14187
DATE	31 - 7 - 1985	PLAN No. TASH 2827



CRADIE MT. LAKE ST. CLAIR NATIONAL PARK

- REFERENCE**
- FLUVIO GLACIALS
 - TERTIARY BASALT
 - ORDOVICIAN
 - CAMBRIAN VOLCANICS
 - CAMBRIAN QUARTZITE
 - QUARTZ - FELDSPAR - BIOTITE PORPHYRY (Cambrian)
 - GRANITE (? Cambrian)
 - GRANITE TOR BATHOLITH
 - PRECAMBRIAN METASEDIMENTS

990757 990758
 Cu,Pb,Zn,Ag (Au) (CN LEACH)
 As,Fe,Mn,Au
 All above elements
 ppm Except:
 Fe %
 Au ppb

981013

5cm

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ROMULUS E.L. 24/84
 SKETCH OF CAMBRIAN GEOLOGY
 PRINCIPAL PROSPECTS AND
 STREAM SEDIMENT RESULTS

REF: SSS - 3 (804, 805)
 SCALE: 1:25000 DRAWN: IMC R.T.
 AUTHOR: IMC W.A.S. REPORT NO.: 14/87
 DATE: 16-7-1985 PLAN NO.: TASP 2695