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AUSTAMAX OPERATIONS LIMITED

MICROFILMED

FINAL REPORT
ON
EXPLORATION ACTIVITIES WITHIN
E.L. 49/82 BEULAH
NORTH TASMANIA

BY

A.I.A. STEWART
July, 1985

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Scale 1:40,000 (approx)

1. INTRODUCTION

Exploration Licence 49/82 was granted on 29th August, 1983. The licence area embraces the northeastern extension of a belt of acid to intermediate volcanics and associated sediments of Cambrian age which are host to massive sulphide mineralisation at Que River, Hellyer, Rosebery and a number of other localities.

2. TENEMENT, LOCATION AND ACCESS

Exploration Licence 49/82, Beulah, was granted on 29 August, 1983 to Amax Australia (Operations) Pty. Limited on 29 August 1983 which in mid 1984 became Austamax Operations Pty. Limited. The annual expenditure commitment is \$24,300.

The licence covers an area of 243 sq. km. and is located immediately to the west and southwest of the township of Sheffield (Figure 1), and 15 km west of Deloraine in northern Tasmania. Access to Deloraine is via the Bass Highway some 50 km west of Launceston.

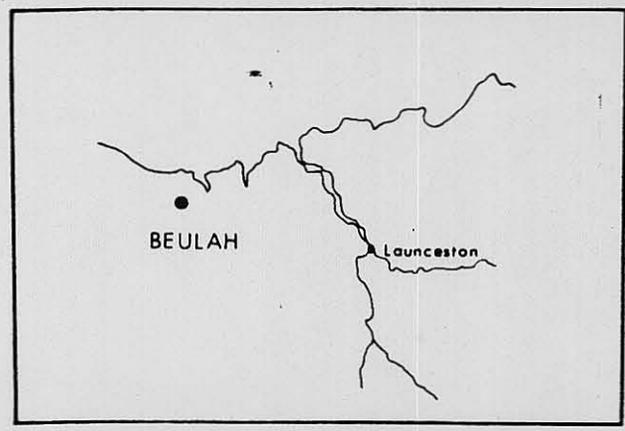
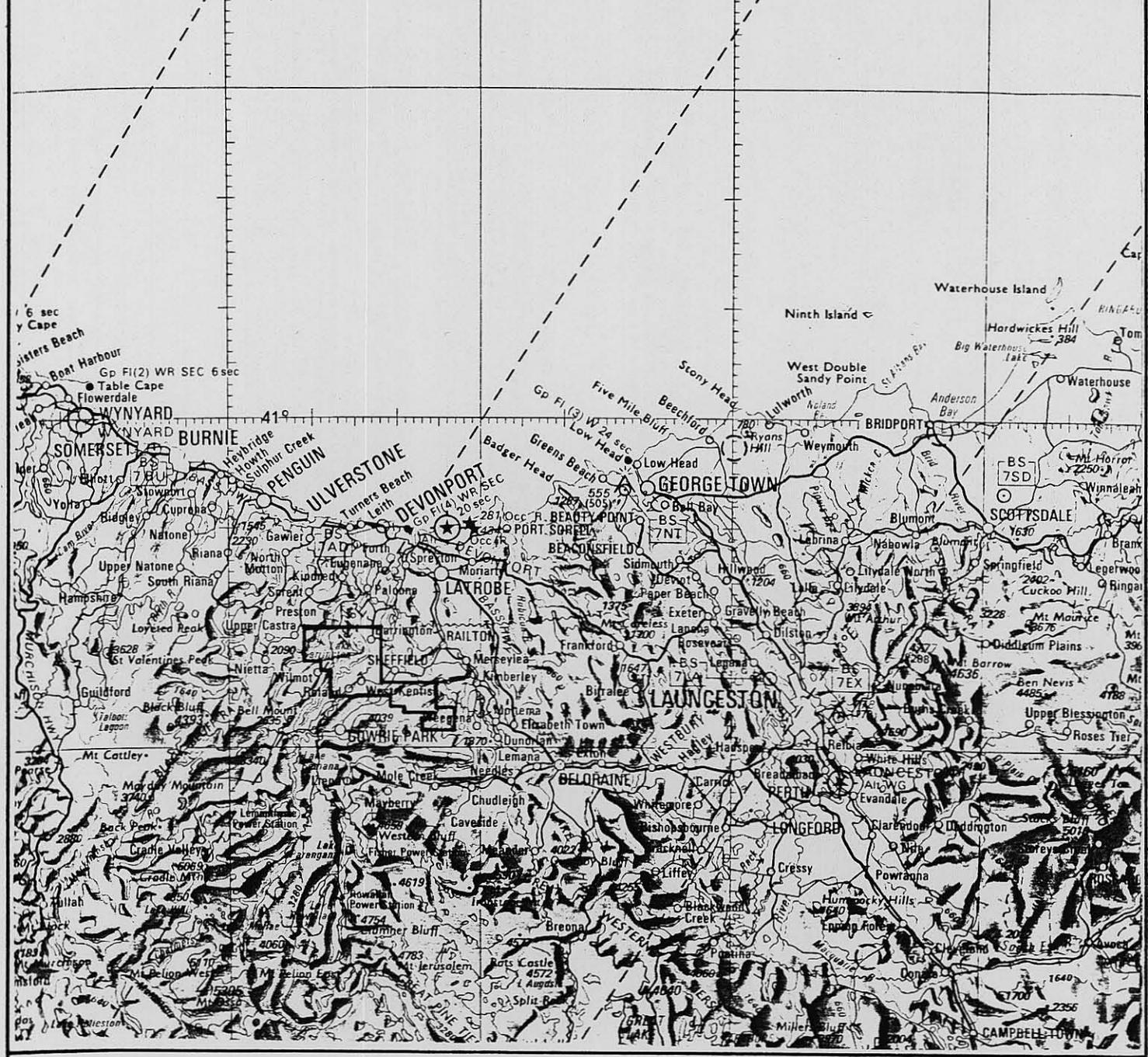
The licence area itself is well serviced by sealed roads in areas of open farming country and by gravel Forestry roads in the more rugged and thickly forested areas.

304

146° 40' E 147° E

BASS STRAIT

- Settlement
- Prime Seal Island
- East Kangaroo
- Mount Chappell
- Goose Island
- Gp Fl (4) W 20 sec



Scale 1:1000 000



AUSTAMAX RESOURCES

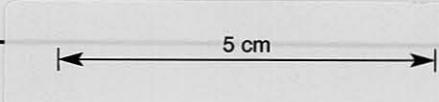
E.L LOCATION MAP

BEULAH

Figure 1.

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3. REGIONAL GEOLOGY & STRUCTURE

Cambrian rocks represent the oldest sediments within E.L. 49/82 and comprise a complex pile of chert, greywacke and volcanic material about 4000 m thick that are considered to be deposited in and around an actively developing basin, the Fossey Mountain Trough. It is approximately 80 km long, 32 km wide, trends NW-SE and is centred on Sheffield. To the north it is bounded by the Precambrian Forth Block and to the south by the Cradle Mountain Block.

The Cambrian succession comprises initial sedimentation of chert (Barrington Chert) within the axial portion of the trough. Deposition of basic lavas and pyroclastic breccias (Beulah Formation) along its flanks then occurred;. Concomitant with this deposition, uplift along the axis of the trough produced a tectonic ridge, the Barrington Ridge, from which chert shed to contaminate sediments of the Beulah Formation. Thick sequences of greywacke turbidites (Gog Range Greywacke) then deposited during a pause in vulcanism. While the source for this material is considered largely to be the Barrington Ridge, the presence of rounded quartzite and mica schist pebbles suggests a Precambrian source area perhaps located in the areas marginal to the basin.

Acid-intermediate lavas and pyroclastics of the Minnow Keratophyre succeed the Gog Range Greywacke. The boundary between the two formations is transitional and is characterised by interfingering of both sedimentary and volcanic rocks near the boundary. Intrusives form small outcrop areas within the Beulah and Gog Range areas. These rocks are granites and microgranodiorites and are Devonian in age within the former area while a

spatial relationship to extrusives of probably co-magmatic affinity and associated alteration indicates a Cambrian age for the hybrid mafic intrusives in the latter area.

Ordovician rocks of the terrestrial Roland Conglomerate and Moina Sandstone origin unconformably overly the Cambrian System. They are common in the Wilmot and Gog Range areas.

Permian Basal Bed rocks are confined to the south-eastern portion of the E.L. to the east of Beulah and comprise pebbly mudstone and conglomerate unconformable over both Cambrian Beulah Formation andesites and Ordovician rocks.

Extensive basalt flows covered the region during the Tertiary Period. These have been weathered back to isolated remnants which crown topographically higher areas. Surficial deposits and talus derived from Ordovician and Tertiary rocks constitute the deposits of the Quarternary.

Fine grained granites and microgranodiorites intrude Gog Range Greywacke sedimentary rocks in the vicinity of Beulah. Total magnetic contour maps indicate that many of the isolated intrusives outcrop are part of the same stock which shallowly intruded the sedimentary rocks. Economic mineralisation is not associated with these intrusives.

Jurassic dolerite crops out only in the south-eastern portion of the area where it is predominantly associated with Permian rocks. This association and its relatively wide outcrop area suggests the dolerite is in the form of

sills. Smaller elongate to circular bodies of dolerite occur wholly within Ordovician and Cambrian rocks and may represent a situation where erosion of Permian rocks has exposed finger roots to the sill sheets.

Essentially the structure of the Sheffield sheet describes a region that has been tectonically unstable since the late Precambrian. Cambrian and Ordovician sediments were initially deformed into a series of broad east-west trending folds. Superimposed upon these structures were a set of major north-west trending folds which tend to follow the outline of the margin of the stable Precambrian nucleus.

In some localities a marked axial plane cleavage which does not penetrate the unconformably overlying Ordovician rocks is developed in Cambrian rocks. These features indicate that an intensive period of deformation preceded erosion and subsequent Ordovician sedimentation. This deformational event appears to correlate with the Jukesian movements in western Tasmania.

4. EXPLORATION PROGRAMME

4.1 Geological Mapping

Geological mapping was confined to the detailed mapping of the Gog Range area, detailed examination of airborne electromagnetic anomaly localities and widely spaced traverses along roads and rivers in the rest of the Licence area. This programme was largely undertaken by Austamax Staff but was supplemented by field work conducted by a consultant geologist, Roger Poltock of R. Poltock Geological Pty. Limited. Details of this work are described in the Annual Report for the period 30/8/83 to 29/8/84 by R.M. Vivian, in Appendix VIII.

4.2 Stream Sediment Sampling

The southern half of the Licence was covered by a stream sediment survey conducted by Asarco in 1973, at a sample density of two samples per square kilometre. Ten anomalies were defined and followed up, but no economic mineralisation was located.

Austamax reinterpreted the data and examined a number of lower order anomalies, as well as examining the anomalies defined by Asarco, and carrying out some fill-in sampling: A total of Eighty-two samples were taken by Austamax. Details of this work are described in the Annual Report for the Period 30/8/83 to 29/8/84 for E.L. 49/82 by R.M. Vivian, pp11-21, Table 1, Appendices II & VIII and Plate 1.

4.3 Geophysics

During January 1984 a combined electromagnetic/magnetic survey totalling 360 line kilometres was flown by Digheem Limited over the southeastern portion of the Exploration Licence (Figure 2). This area was selected for the survey because it contains the bulk of the Cambrian acid to intermediate volcanics known in the Licence area.

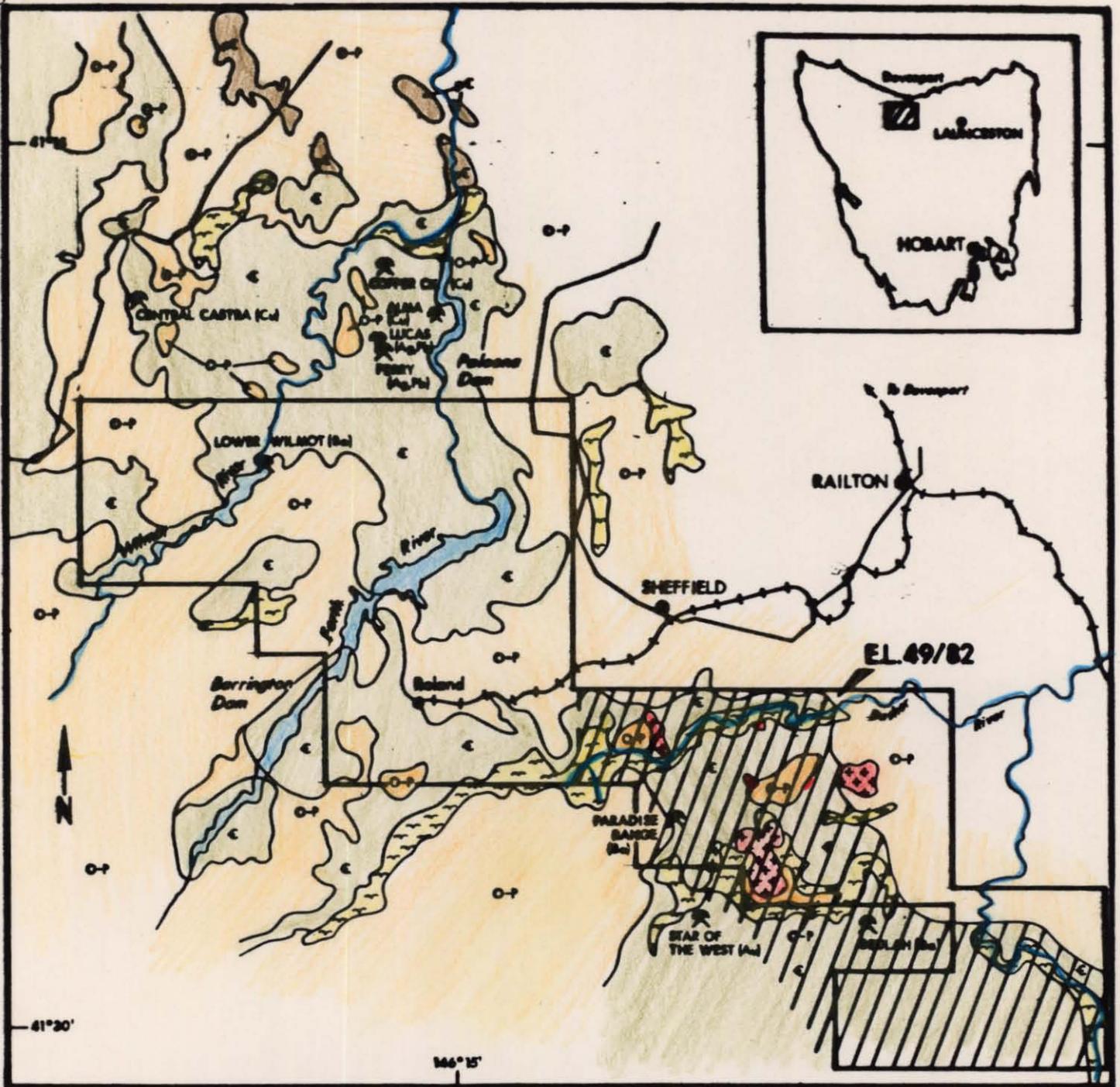
Full details of this survey, the follow-up work, and results are given in the Annual Report for the Period 30/8/83 to 29/8/84 by R.M. Vivian, pp22-29, Table 2, Appendix VII and Plates 3 & 4.

4.4 Rock Chip and Auger Geochemistry

Outcrop is very sparse throughout the Licence area, the Cambrian volcanics being particularly prone to deep weathering. The stream sediment and airborne electromagnetic anomalies were therefore mainly tested by hand auger drilling. One hundred and seventy auger samples were taken, as well as 100 rock chip samples, ten of which were examined petrographically by H.W. Fander of Central Mineralogical Services.

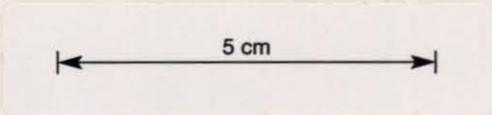
Assay results and petrographic descriptions are shown in Appendices I-V of the Annual Report for the Period 30/8/83 to 29/8/84 by R.M. Vivian.

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Scale 1:40,000 approx.

1:200,000



- QUATERNARY Recent alluvium
- DEVONIAN Granites
- POST-CAMBRIAN Undifferentiated sediments and volcanics
- CAMBRIAN Undifferentiated sediments and volcanics
- PRE-CAMBRIAN Sediments
- Airborne E.M. Survey Area

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FIGURE 2

BEULAH
GEOLOGICAL SKETCH MAP SHOWING WORK DONE

5. CONCLUSIONS AND RECOMMENDATIONS

All stream anomalies defined by Asarco's work during the period 1973 to 1976, and all airborne electromagnetic anomalies located during Austamax's 1984 survey were examined, and no economic mineralisation was located; it is therefore thought unlikely that any significant outcropping or sub-outcropping massive sulphide mineralisation occurs associated with the Cambrian acid to intermediate volcanics in the Licence area.

Since any further exploration of the Licence area would have to be for buried mineral deposits, and therefore of high cost, a joint venture partner was sought. No interest has been expressed to date, and it is recommended that the Licence be relinquished.

10. EXPENDITURE STATEMENT

I, Alan I.A. Stewart of 7/128 Burns Bay Road, Lane Cove, in the State of New South Wales do solemnly and sincerely declare that this is a true statement of expenditures for Project No. 604, Beulah E.L. 49/82 for the period 30th August 1983 to 30th June, 1985.

Utilities	154
Publications, Maps, Reports & Memb.	\$ 1,051
Consultants	18,000
Contractors (except drilling)	39,344
Drafting Services & Supplies	1,410
Assaying and Analysis	5,751
Office Rent	3,346
Office & Office Equip. Maintenance	321
Telephone, Telex & Telegraph	1,546
Postage, Shipping & Freight	380
Stationery & Office Supplies	485
Field Materials	261
Car Hire & Taxis	754
Air Travel	1,077
Lodgings, Meals & Entertainment	1,963
Vehicles - Maintenance	2,873
Allocated Salaries Incl. Fringe	46,360
Allocated Overheads	<u>18,069</u>
TOTAL	<u>\$143,145</u>

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900.

Subscribed and declared at Sydney)
 this 4th day of July One thousand)
 nine hundred and eighty ~~four~~ FIVE)
 before me: *J.P.*

Alan I.A. Stewart

J.P.
 A Justice of the Peace