E.L. 16/78

ABERFOYLE EXPLORATION PTY. LTD.

MEREDITH GRANITE PROJECT

PRELIMINARY REPORT

1978/79 SUMMER EXPLORATION PROGRAMME

FOR THE SIX MONTHS ENDING APRIL 20,1979

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July, 1979.

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TABLE OF CONTENTS

APPENDICES

LIST OF PLATES

MER 4 - 347/400, 347/405, 355/400, 355/405, 363/395, 363/40
(A-F - one missing, not on microfiche)

INTRODUCTION

Location

Exploration Licence 16/78 covers an area of 225 square kilometers situated to the south and south-west of Luina on the West Coast of Tasmania. (Fig. 1, Plate No. MER 1). The area enclosed by the E.L. includes the northern part of the Meredith Granite and adjacent contact rocks.

Geomorphology

The topography of the area, in general, is characterised by moderate to high relief with granite of the Mt. Meredith Range and Mt. Ramsay forming prominent ridges on the west and east sides of the E.L. respectively.

Rainfall is strongly seasonal with more than 80" falling in the April to December period.

The Meredith Granite itself has been deeply incised by waterways, with hills, typically rounded by exfoliation, possessing steep slopes where small landslides are common. Stream drainage is dendritic and reflects the dominant NNE - SSW and subordinate WSW - ENE and WNW - ESE joint fracture sets. Larger creeks are generally easily negotiated, however soakage at stream headwaters supports a growth of thick horizontal and sword grass. Ridges are thickly forested with tall myrtle, leatherwood and sasafrass, with variable amounts of horizontal, bauera and young myrtle often impeding the progress of ground parties.

Deeply incised waterways are characteristic of the Cambrian sediments where vegetation is typically dense.

Mafic rocks of the Heazlewood Complex support moderately forested hills and button grass flats. In these regions, low to moderate relief predominates, with broad open valleys.

Three major drainage systems traverse the northern portion of the E.L., they are respectively, the Heazlewood, Castray and Whyte Rivers. Each represents a relatively shallow, fast flowing and meandering water channel. The Whyte River contains waste products from the mining operations at Luina.

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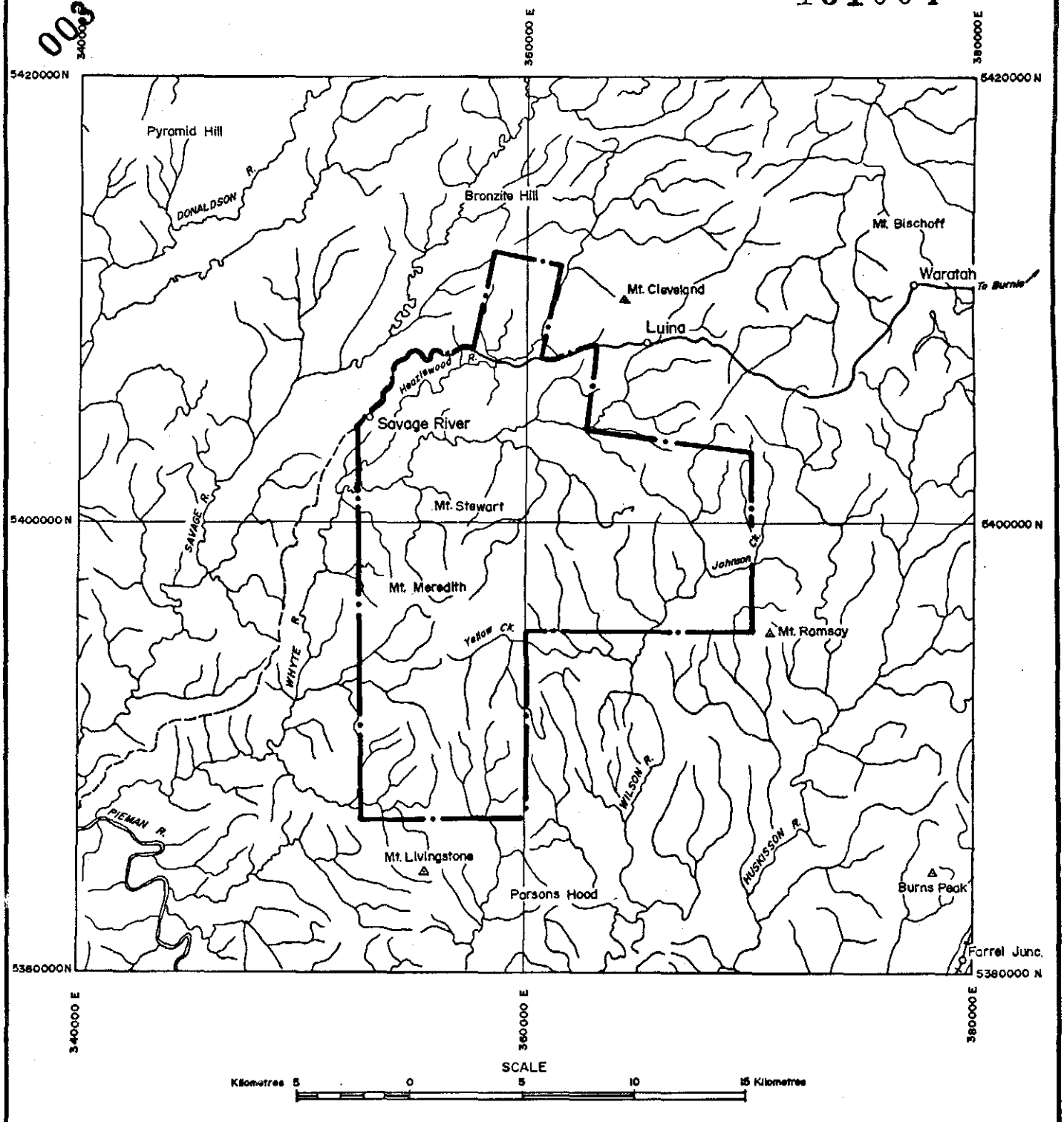


Road

Track

River, creek

Town

Trigonometric station △

E.L application boundary

5 cm

Aberfoyle Exploration

Drawn: R.K.Y	
Traced:	
Checked:	
Revised by: Date:	

NORTH WEST TASMANIA

MEREDITH — E.L. 16 / 78
LOCATION PLAN

Location code:	
Date:	August 1978
Scale:	1:250,000
Plate No	MER 1

Sn concentrations realized by stream sediment sampling along this waterway may be derived from mine waste.

The water levels of each of these major drainage systems is subject to rapid and sporadic variation, totally dependant on local rainfall.

Access

The Meredith Granite region is bounded to the north by the Corinna Highway, linking Savage River through Luina to Waratah. The north-west extremity of the E.L. is actually defined by a portion of this highway.

From the highway only two 4WD tracks, of any significance, lie within the E.L. The first of these commences approximately 6.5 km to the west of Luina and extends southward for 7 km to the Mt. Stewart region. The other, incorporated within a maze of logging tracks, extends 2.5 km in a southerly direction from the Heazlewood River bridge.

Betts Track, traversible by foot only, commences near the Magnet Dam site, 5 km N.E. of Luina. This track provides a S to S.W. traverse across the E.L. for almost 10 km. Field work during the 78/79 summer provided 6 km of walking track in the area to the west of Betts Track. (Plate MER 6).

Presently under construction by Comstaff Pty. Ltd. is an all weather 4WD track from the Corinna Highway to Mt. Ramsay. Although outside the limits of the Meredith E.L. this track may be utilised for access to the eastern fringes of the region.

The remainder of the area is inaccessible to ground parties and only partially accessible to a helicopter supported programme contingent on the construction of landing sites. For general reconnaissance exploration, a combination of helicopter operations and the restricted use of cut lines has proved the most efficient in terms of time and area covered.

Exploration Aims

Reconnaissance exploration was designed to outline areas of attractive stratigraphy by means of:

- Geological mapping at photo scale (1:15,000) and selective rock chip sampling for geochemical analysis and petrographic description.
- Regional Stream Sediment Sampling.
- Airborne Magnetic Survey (Aberfoyle 1965).
- Aerial Photo Interpretation (Cominco Exploration Ltd. 1974).

Exploration was directed at the potential for tin/tungsten mineralisation. The specific styles of mineralisation likely to occur within the environment of the granite and its contact rocks are listed below:

a) Cambrian Sediments

Recognition that sediments in this area are petrographically similar to those proximal to the Cleveland orebody, suggest reactive carbonate horizons may occur where there is potential for either skarn or sulphide replacement tin/tungsten mineralisation.

b) Ordovician - Silurian Sediments

Reactive carbonate horizons are known to exist within this formation (e.g. Godkin Mine), the possibility of replacement or skarn type mineralisation of the Kara, Moina style is considered.

c) Meredith Granite

Within the granite, exploration was directed toward the possibility of griesen and breccia pipe Sn mineralisation.

d) Heazlewood Complex

Assessment of old workings indicates Ag - Pb - Zn and Cu mineralisation in brecciated ultramafics. Results of previous exploration suggests low tonnage potential for such deposits.

PREVIOUS EXPLORATION

Introduction

The area incorporated within Aberfoyle's E.L. 16/78 has been prospected for both its hard rock and alluvial tin potential for decades. However, only recently has the region been subjected to systematic exploration. Comstaff Pty. Ltd. under E.L. 1/68 carried out limited work until 1973 when they relinquished the lease. ANZECO, under E.L. 11/75 held the property until 1976. Both companies undertook stream sediment sampling programmes covering both the Meredith Granite and contact rocks to the north. Sampling within the granite omitted large areas due to inacessibility. (Plate MER 6).

Comstaff Pty. Ltd.

Comstaff's programme incorporated comparative geochemical techniques involving the collection of adjacent rock chip and soil samples as well as stream sediments and panned concentrates.

A range of elements were analysed by various methods. The relevant data is contained within the Comstaff "Summer Exploration Activities" - 1972 Report.

The Mt. Stewart and Jasper Mines were assessed by detailed geochemical surveying and a drilling programme on the former. Neither these prospects or any of the regional stream sediment analyses produced encouraging results.

ANZECO

The Australian and New Zealand Mining Company confined its exploration to the northern contact region of the granite. Heavy mineral concentrates extracted from stream sediment samples were assayed for scheelite and wolfram, as well as tin, chromium and osmiridium. Analysis of results of stream sediment sampling indicated two anomalous zones. The most encouraging results refer to tin values (7500 ppm) south-east of the Mt. Stewart region in the upper reaches of the Castray River. The second anomaly records the presence of visible scheelite in panned concentrates within a creek, entering the Whyte River approximately one km west of Mt. Stewart (Plate MER 6).

Aberfoyle Exploration Pty. Ltd.

Preliminary interpretive work was initiated when Aberfoyle was granted the licence in 1978. An Aberfoyle airborne magnetic survey (completed in 1965), covering the Waratah - Savage River area, was assessed. Senior Geophysicist S.S. Webster delineated eight anomalies generally located near the northern contacts of the Meredith Granite. These are presented on Plate MER 7.

The results of the photogeologic interpretation of the licence area by I. Freytag in 1974 are listed in Appendix C. Seven anomalies are identified and recorded on Plate MER 7.

Follow up of these interpreted anomalies was carried out this season, however, future work is planned for one of the more distinct airphoto anomalies.

GEOLOGY

Introduction

Lithologies within the licence area vary from Pre-Cambrian to Devonian in age. To date, exploration has been concentrated on Cambrian sediments and to a lesser extent on Devonian granitic rocks, both in the northern part of the Meredith Granite area.

The geological map compiled during the summer programme was supplemented by the results of previous exploration and the interpretation of geophysical and photogeologic features. Petrographic analyses of various samples has provided data on the stratigraphic and structural controls of some exploration targets. Petrological reports are given in Appendix A.

Lithologies

Whyte Schist

Pre-Cambrian in age, the Whyte schist outcrops as massive quartzite, muscovite-quartz schists and black carbonaceous slates. Two deformation events are discernable in outcrop. The slaty cleavage is interpreted as representing the D_1 event since weakly schistose rocks display no evidence of prior deformation.

Event	Structure
D_1	Production of penetrative slaty cleavage.
D_2	Localised crenulation cleavage with associated restricted tight isoclinal folding.

Units of the Whyte schist are included in the Arthur Lineament and are believed to be in fault contact with Cambrian sediments at the western margin of the E.L. (Plate MER 3). No mineralisation was locally observed in this formation.

Heazlewood Complex

Basic volcanics, basic tuffs, layered ultramafics, mafic tuffs, pyroxenites, peridotites and serpentinites outcropping to the north of the Meredith Granite, comprise the Heazlewood complex. In the Renison Bell area to the south, a similar suite of rock types has been mapped as an ophiotite sequence, however, mapping to date has not confirmed this observation to be true of the Heazlewood ultramafics.

In many areas of the complex, shearing is intense producing boundinage structures in a strongly anastomosing cleavage. In such cases serpentinisation has occurred making identification of the original rock type difficult. Rare xenoliths were observed within the ultramafics.

Cambrian Sediments and Volcanic Associates

The relationship of the Cambrian Sediments to the older (?) Heazlewood Complex is not fully understood. Contacts mapped to date between sediments and ultra-mafics have been accompanied by intense shearing and boundinaging of the former, implying a faulted contact. However at a location on the Castray River, there is an apparent unconformity between these units. This is supported by the occurrence of a conglomerate consisting of ultramafic boulders (up to 20 cm) in a matrix of fine amphibole (tremolite/actinolite) apparently overlying basic volcanics and volcaniclastics of the Heazlewood Complex. This conglomerate passes into undeformed Cambrian black mica sandstone, suggesting the conglomerate is basal to the sequence of Cambrian sediments in the region. Further detailed mapping is required to confirm these observations.

As exploration was concentrated within the Cambrian rocks, a preliminary evaluation of lithological types is warranted. It should be noted that the units do not appear in stratigraphic sequence.

In general the sediments fall into 2 categories:

(i) Labile Turbidites

(ii) Lithic Sandstones/Pelites

Attractively altered horizons of the former variety display metasomatic diopside and tremolite/actinolite assemblages. The later, aluminous lithology favours phlogopitisation and grades into a cordieritic hornfels.

a) Black Massive Siltstone

This fine grained homogeneous siltstone is massive and rarely exhibits bedding. Thermal metamorphism has nucleated biotite, in outcrop, proximal to the granite contact. Sulphides (py/po) occuring as distinct bands and fine disseminations, (< 1% - 20%) as well as clots up to 3 mm in size, are dispersed throughout this rock type. These semi-ubiquitous Fe-sulphides are often accompanied by diopsidic alteration and silicification. This is considered to be associated with wall rock alteration and contemporaneous with the formation of at least some sulphides.

b) Micaceous Sandstone

Red and black, generally massive, coarse mica sandstones occur throughout the Cambrian stratigraphy. Lithic fragments, about 0.5 mm in size, identifiable as feldspar and quartz, are common in this lithology.

c) Red and Green Massive Siltstones

These two distinctive lithologies, often found interbedded,contain variable amounts of fine muscovite, with quartz and feldspar fragments common. Red chert horizons are noted within this sub-unit.

d) Dolerite

Occuring throughout the Cambrian sequence are small dolerite dykes containing xenoliths of Cambrian rocks. Mapping along the Whyte River has noted large exposures of dolerite (>50 m), however its relationship to the Cambrian sediments is uncertain. Although the age of the dolerite is unknown, it has been included with the Cambrian sequence.

Ordovician - Silurian Sediments

Poorly consolidated, white, Crotty quartzites constitute the majority of the younger sediments within the E.L. However, stylolitic limestone has also been mapped along the Castray River. The latter may correlate with the Gordon limestone rather than those described at the Godkin Mine, which may be up-sequence in relation to the stylolitic limestones.

A coarse conglomerate has been mapped proximal to the inferred contact between Cambrian and Ordovician-Silurian sediments. It is composed of large, angular fragments of white bedded quartzite in a poorly consolidated sandstone matrix. In other areas of northern Tasmania basal Ordovician conglomerates rest unconformably on Cambrian sediments (Weste 1978) and it is possible that a similar relationship exists in the licence area.

Devonian Granite

The Meredith Granite massif forms a large stock, dated by K-Ar methods to be 350 m.y. and by Rb-Sr at 353 ± 7 m.y.

Mapping has delineated only three major granite types to date. Textural differentiates account for local variation within each of these units.

(i) A coarse grained K-feldspar + quartz + biotite adamellite.

(ii) A texturally variable K-feldspar + quartz + biotite porphyrytic adamellite. (The size and abundance of the phenocryst phases varies throughout the stock). The matrix is composed of quartz + biotite + K-feldspar + plagioclase (An_6 - An_{12}).

(iii) A fine grained homogeneous quartz + feldspar (K-feldspar ?) + biotite granite, with an aplitic texture.

Minor and accessory phases within these granite types include muscovite tourmaline, hornblende, apatite, zircon and sphene.

Small lenses, veins and dykes of aplite and pegmatite (quartz porphyries) also occur within the granite.

Alteration of the granite is not extensive. Small fissure veins possessing halos of sericite and tourmaline as well as sericitised and partially tourmalinised porphyry dykes at Mt. Stewart represent wall-rock alteration possibly associated with Sn mineralisation. The degree of alteration in this area suggests the granite now exposed was emplaced significantly deeper than that typical of a cupola or roof zone.

Rare muscovite and tourmaline griesens are known to outcrop. Indeed, the track along the eastern boundary of E.L. 1/62 exposes a number of small muscovite griesen zones, one of which has yielded an anomalous tin/tungsten reading (Sn 500 ppm W 25 ppm - Sample 201121).

MINERALISATION

Meredith Granite

Known mineralisation within the Meredith Granite occurs both as hard rock and alluvial tin deposits, as well as small fracture-fill veins containing accessory sulphides.

Significant mineralisation occurs at Tadpole Hill where a quartz-tourmaline "griesen" hosts cassiterite mineralisation. (Comstaff, 1972/73 Report). Available information, however, suggests this mineralisation is better described as a stockwork vein deposit rather than a "griesen".

Numerous quartz-tourmaline ($\pm$ pyrite) fissure-fill veins outcrop through the granite, however cassiterite is rarely identified. (Stockley, 1972). Minor occurrences of granitoid fault breccia subsequently cemented by alteration processes including;

- Silicification
- Chloritization
- Tourmalinization,

were found to yield anomalous tin/tungsten values.

Partially altered, porphyritic adamellite occurs as a dyke-like intrusion near Mt. Stewart; no cassiterite has been reported.

Fracture and/or joint surface controlled, dendritic molybdenite clots ($\pm$ epidote and phlogopite) have been observed within the adamellite porphyry. The habit of this mineralisation and its limited occurrence does not suggest any immediate economic potential.

In summary, mineralisation and alteration within the granite itself appears controlled by features of brittle fracture; e.g. joint fractures. Given this, it is reasonable to expect a degree of alteration (sericitisation, tourmalinization etc.) along other similar features; e.g. granite margins, dykes and fault contacts. Such locations may or may not possess associated mineralisation, but appear to offer little in terms of potential tonnage.

Alluvials have been mined for both cassiterite (Wombat Flat) and monazite (Yellowband Plain). Numerous small placer deposits are reportedly cassiterite bearing near the eastern and southern granite margins, however they appear to be of limited tonnage potential.

Contact Rocks

The rock types in contact with the granite include both sedimentary and igneous varieties.

Sedimentary

Known mineralisation in sedimentary contact rocks is restricted to skarn type deposits at Mt. Lindsay and reportedly at Mt. Ramsay. The Mt. Lindsay deposit consists of cassiterite - magnetite - pyrite - pyrrhotite - chalcopyrite and arsenopyrite in hornfelsed calc-silicates containing hornblende, calcite, diopside, garnet, axinite, wollastonite and tourmaline. Aberfoyle and Renison Ltd. are at present involved in a joint venture to explore this area.

Little is known of the Mt. Ramsay prospect, although it is known to be a bismuth/scheelite bearing hornfels skarn. Comstaff are at present actively exploring this area.

Replacement Sn deposits occur at Cleveland and Renison, both in Cambrian sediments. The deposits consist of pyrrhotite, pyrite, chalcopyrite and cassiterite with minor arsenopyrite, flourite, sphalerite and galena. At Renison, Devonian granite considered to be related to the Meredith granite, outcrops at Pine Hill about 2 km from the mine. Exploratory drilling has also shown the granite to occur at a depth of approximately 300 m beneath the orebody.

Minor disseminations of pyrite/pyrrhotite are commonly associated with the more siliceous hornfelsed arenites throughout the northern contact region; this style of mineralisation may identify lithologies prospective for replacement Sn mineralisation.

Igneous

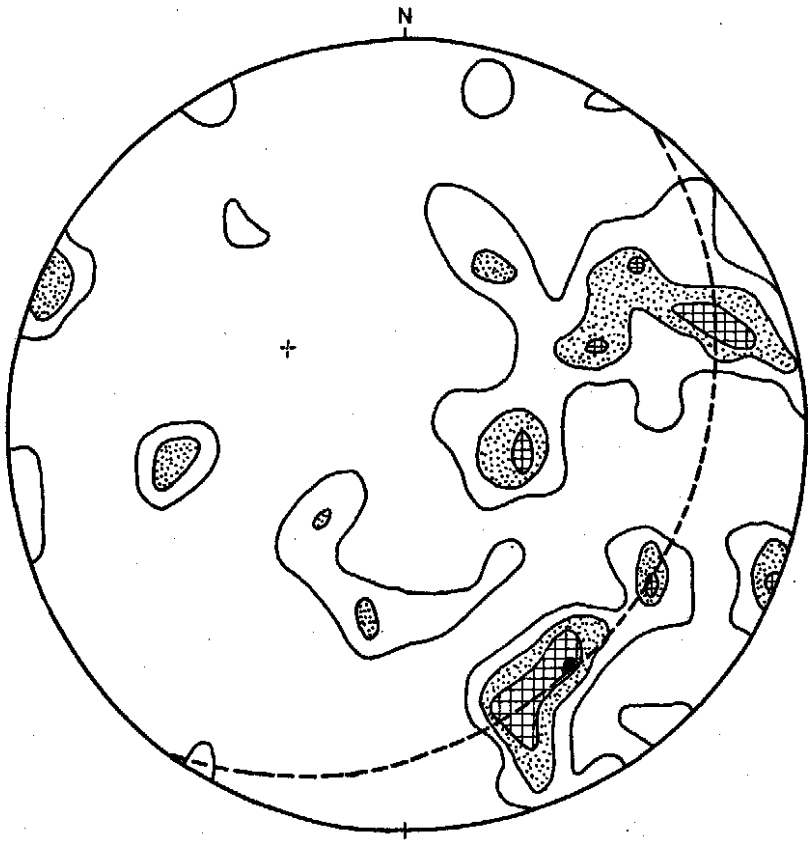
Known mineralisation within the Cambrian igneous suite is largely structurally controlled, for example fault breccia type Ag-Pb-Zn deposits occur at Mt. Stewart and Mt. Jasper.

Similarly, small Cu shows apparently related to fault and joint features, in an essentially Cu rich environment, occur throughout the Heazlewood Complex. The mafic tuffs associated with this complex have been observed to contain minor disseminations of pyrrhotite, pyrite, chalcopyrite, arsenopyrite and native copper.

STRUCTURE

The structure of the Cambrian and Ordovician-Silurian sediments toward the northern margin of the licence is largely unknown. To the west near Savage River dips are uniformly to the west at moderate to steep angles with bedding upright. Near the Mt. Stewart track dips are at moderate angles to both the east and west, however younging is unknown. A preliminary stereonett plot Fig. 2, indicates a possible anticline with a fold axis plunging NNW at a steep angle, however the number of readings available relegates this to speculation. A broad structure, of this type, is however consistent with well defined structural trends to the south of the Meredith granite in the Renison Bell - Mt. Lindsay area. It is possible, therefore, the granitic intrusion had a wedging effect on pre-existing strata. Both structural trends and lithological similarities of the Contact Creek and Mt. Lindsay areas enhance a wedging emplacement mechanism.

TTS. – POLES TO BEDDING



LEGEND – DENSITY READINGS

FIGURE 2

Stereographic Projection, using Schmidt net, of Poles to bedding (So). Contoured by Schmidt method. The plot demonstrates the influence of a generation of folds with axes plunging 60→307. The poor definition of the great circle may represent:

(i) A second phase of deformation weakly overprinting the first,

or (ii) A result of the region nature of data collection.

or (iii) The influence of a wedging emplacement mechanism.

GEOCHEMISTRY

A major component of the summer exploration programme was stream sediment geochemical coverage of the prospective Cambrian rocks in the area of the northern contact of the Meredith Granite.

Plate MER 6 indicates areas covered by other company stream sediment sampling. Aberfoyle sampling was confined to the areas not covered, apart from areas previously outlined as anomalous for Sn and W. One of the areas resampled near the Castray River is underlain by granite.

353 samples were collected from creek and stream beds. These were reduced in the field by a 12# sieve. The samples were later dried and seived through 80#.

The -80# fraction is being analysed by AMDEL by XRF for Sn, W and Mo and by A.A.S. for Cu, Pb, Zn.

Sample locations were plotted on 1:15,000 air photos, (1977/1978 Forestry Commission, Burnie Concession area, survey). In conjunction with geological mapping 144 rock chip samples were collected. These are being assayed for Sn, W, Mo, Cu, Pb, Zn. Appendix B contains all rock chip assay data available to date.

Stream sediment geochemical assay results are not yet available. It is anticipated all data will be presented in the next report.

CONCLUSION

The results of the exploration programme are encouraging. A number of areas of interest have been delineated on the basis of geology and other company geochemical data. The areas are listed below.

a. Contact Creek area.
b. Scheelite Creek area.
c. Zn rich rock near Mt. Stewart.
d. Circular feature near Betts Track. (Air photo feature).
e. Anomalous Sn values in upper Castray River.
f. Anomalous Sn values in small creek off the Whyte River.
g. Anamalous Sn values, Mt. Stewart Mine.

As geochemical data is not yet available discussion of the areas of interest will be presented in the next report. Recommendations for further exploration work will then be made.

FINANCE

Expenditure for the six months ending 20th April, 1979:

Geology	$ 46,835
Survey	505
Geophysics	40
Geochemistry	12,967
Tenure	132
Sundries	834
	$ 61,313

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APPENDIX A

PETROLOGICAL DESCRIPTIONS

By D. COWAN

REPORT CMS 79/2/23 CENTRAL MINERALOGICAL SERVICES

Petrological descriptions relate to a suite of rocks collected in the Contact Creek Area. Refer Plate MER 3 for location.

REPORT CMS 79/2/23

Petrological Descriptions

206 983 (T.S. 26841)
This is a fine-grained diopside rock with accessory sphene and sulphide. It represents a contact-altered/metasomatised turbidite-likeclastic sediment and several features are strongly reminiscent of labile greywackes of the Crimson Creek Formation (particularly the Dreadnought Hill Member).

The original sediment was a massive to finely-laminated, locally graded psammopelite (fine sandstone/siltstone). Vague relict features indicate some (probably much) of the clastic material was basic-intermediate volcanic debris and a characteristic feature is the presence of abundant clastic fine to ultrafine opaques (now replaced by microcrystalline sphene).

Diopside is pervasive as fine to microcrystalline aggregates pseudomorphing the primary sedimentary fabric. Irregular discontinuous veins of coarser granular diopside occur sporadically. Sulphides are largely restricted to certain bands and may represent altered syngenetic rather than introduced material, at least in part. Staining reveals accessory K-feldspar is present, although optically undetectable.

Polished section examination reveals fine spongy aggregates of pyrrhotite, intergrown with relatively coarse (mean 30-40 μ) granular diopside. Pyrrhotite comprises up to 60 % of this band and is almost entirely replaced by pyrite (var. melnicovite). Accessory traces of chalcopyrite occur as small blebs (< 10-100 μ), associated with the pyritised pyrrhotite and sparsely disseminated elsewhere. This phase is similarly of semi-banded distribution.

206 985 (T.S. 26842)
This is an altered turbidite, essentially similar and closely related to 206 083, but coarser-grained and relatively polymict in comparison. This rock is bedded on a millimetric scale and poorly to moderately sorted in the silt to medium sand range. In addition to basic-intermediate volcanic debris as splintery to subround clasts, the framework includes varying proportions of angular to subround quartz (volcanic, vein, metamorphic types), pelitic and cherty rock fragments, and a certain acid volcanic component as reflected in felsitic "rhyolite" clasts.

A few thin partings consist of crypto- to microcrystalline feldspar, heavily stained with ultrafine cloudy sphene. These show relict splintery microtextures and may represent original pelitic ash horizons in an otherwise volcanomict, rather than strictly tuffaceous, sediment.

Metasomatism is controlled by bedding with the more labile bands extensively replaced by fine-grained diopside. Elsewhere, diopside and pale tremolite-actinolite are accessories to an argillic assemblage of brownish clay (possibly phlogopite, too fine for positive optical identification). Potash feldspar (adularia, where recognisable) is an accessory alteration phase along with albite, sphene and quartz. The rock is variably stained with fine-grained Fe-sulphide.

206 986 (T.S. 26843)
This is a deformed and altered turbidite, compositionally very similar to 206 985, but distinctly finer-grained. The rock is laminated on a sub- to millimetric scale with an alternation of shaly and silty to fine sandy bands, which may be weakly graded. Bedding is weakly deformed into disharmonic microfolds (?slumping) and intersected by discontinuous fractures healed with diopside. Clastic components are very poorly resolved with only disseminated quartz grains persisting as relics.

The bulk of the rock has altered, probably during diagenesis, to ultrafine quartzofeldspathic material, locally stained with argillic material. These phases are variably impregnated with fine-grained diopside, largely concentrated marginal to diopside (-quartz) veinlets which, on the basis of irregular to ptygmatic habit, may represent altered diagenetic carbonate veinlets. Pale actinolite, pale yellow-orange phlogopite and ultrafine cloudy sphene are accessory alteration phases. Fine-grainedpyrrhotite occurs associated with the diopsidic veinlets.

206 989 (T.S. 26844)
This is a fairly typical metasomatically altered turbidite, essentially similar to 206 986.

Relict features indicate a silty pelite, bedded on a millimetric scale, and grading into a fine-grained sandstone. Bedding is undeformed and essentially planar with localised scour- and fill-structures at the base of sandy beds. Finer-grained (silt-sized) clasts may show a marked dimensional preferred orientation, and this gives the rock a certain (and misleading) schistose character. There is, however, no definite evidence of regional metamorphism beyond load- or burial conditions.

Clastic material is heavily altered and poorly resolved. Clastic quartz is virtually absent and the bulk of clastic material was clearly labile matter, presumably volcanomict, if only by analogy with associated specimens. This has been replaced by cryptocrystalline quartzofeldspathic material, which also forms the matrix/cement. Subsequently, the rock has been variably impregnated with fine to ultrafine tremolite with accessory diopside and pervasive cloudy crypto- to microcrystalline sphene.

Fine to ultrafine Fe-sulphide is disseminated throughout. Coarser (sandy) bands tend to be diopsidised and include disseminated fine-grained magnetite.

206 990 (T.s. 26845)
This rock can be compared with 206 985 in terms of recognisable clastic components, but is finer-grained and better sorted. There is evidence of slumping in a millimetric scale intercalation of silty fine sandstone and silty pelite with textural relationships confused by frequent fractures. The rock grades locally into a cryptocrystalline pelitic ?ash and elsewhere into fine to medium sandstone.

Hornfelsing effects, although weak, are relatively marked in comparison with the associated specimens. Metasomatism is marked by pervasive development of fine to ultrafine tremolite-actinolite with subordinate phlogopite and accessory traces of diopside. Veinlets consist of amphibole with accessory quartz and traces of albite.

Primary opaques have crystallized as very fine flaky ?ilmenite, locally replaced by cloudy microcrystalline sphene. Minor traces of Fe-sulphide and ?arsenopyrite are present.

206 992 (T.S. 26846)
This rock is a uralitised microgabbro and, as such, is unrelated to the accompanying volcanomict greywackes. It could represent a late-stage, deuterically altered minor intrusive phase (e.g. a dyke) or, alternately, the core of a flow.

The relict fabric is ophitic with coarse areas (to 1 mm) of uralitised pyroxene, enclosing and interspersed withalbitised plagioclase laths (mean 50 μ). Incipiently leucoxenised opaques are evenly disseminated throughout and there are minor traces of apatite. Uralite is a pale actinolite.

Titaniferous phlogopite is an accessory alteration phase. The rock has been incipiently hornfelsed. These features suggest that it predates the granite, but there is little to choose between intrusive and extrusive origins on petrological grounds. Hopefully, this willbe resolved from field evidence.

206 988 (T.S. 26847)
This rock is a more or less typical altered labile greywacke, grading from a silty pelite to silty fine sandstone with thin, semi-aphanitic pelitic ?ash partings. There is evidence of slumping in irregular disharmonic microfolds, which predate discontinuous intersecting microfractures.

Alteration ismarked to the extent that sparsely disseminated angular quartz grains and rare chert-metaquartzite fragments are the only recognisable clastic components. The assemblage comprises tremolite and diopside in varying proportions with extremely fine K-spar (?adularia) revealed by staining, and minor recognisable albite. Diopsidic veinlets are common. Fine-grained Fe-sulphides(pyritised pyrrhotite in part) are disseminated throughout.

201 010 (T.S. 26848)
This is a relatively fine and even-grained altered turbidite, essentially a laminated and variably graded siltstone. Clastic material is poorly resolved, but shapes are splintery to shard-like and the rock may represent a subaqueous pelitic ash. Mineralogically, it consists of cryptocrystalline feldspar (?albite, accessory K-spar, quartz), variably impregnated with pale-green tremolite-actinolite (trend hastingsite). The metasomatic amphibole is of bedded distribution and largely predates discordant microfaults healed with Mg-chlorite and relatively pale amphibole.

In contrast to associated specimens, this rock is devoid of sulphide. This may reflect a relatively low metasomatic grade (pale amphibole as against diopside) or, alternately, a paucity of syngenetic sulphide.

201 013 (T.S. 26849)
This is an extensively veined and altered, fine-grained labile turbidite. Few primary featurespersist, but the clastic framework appears to have been essentially similar to that of 206 985; that is, dominantly basic-intermediate volcanomict material with a subordinate component of quartz, sedimentary and intermediate-acid rock fragments. Sorting was relatively good in the coarse silt to fine sand range and the sandstone was only weakly bedded.

Fine-grained actinolite (trend hastingsite) is pervasive as a replacement of the labile constituents (rock fragments, matrix) with only quartz and accessory clastic opaques persisting. Quartz-actinolite veins are common and the rock locally grades into a healed breccia with disorientated angular clasts of actinolitised host rock.

A late phase of stress is reflected in weakly strained extinction in the vein quartz. There are no sulphides in the area sectioned.

201 014 (T.S. 26850)
This is a faintly bedded fine and even-grained (i.e. well-sorted) volcanomict turbidite, moderately altered and weakly mineralised with fine-grained, partly pyritised pyrrhotite disseminations.

The clastic framework is relatively well preserved with vague, but identifiable, microcrystalline felsic lava clasts accompanied by subordinate, partly abraded feldspar laths. Accessories include clastic quartz grains and opaques. Bedding is defined mainly by a dimensional preferred orientation of clastic particles, but is weakly graded on a coarse millimetric scale.

Alteration has preferentially affected the more labile clasts and the microcrystalline feldspathic matrix. The assemblage comprises very fine-grained actinolitic amphibole with accessory traces of diopside and cloudy zoisitic epidote. Clastic feldspar tends to be saussurite-stained and/or albitised. Discontinuous actinolitic veinlets with spongy pyrrhotite disseminations occur sporadically.

201 015 (T.S. 26851)
This is a relatively strongly altered volcanomict greywacke. The rock is bedded on a millimetric scale and grades from a moderately sorted silty fine sandstone to siltstone with thin, impersistent pelitic ?ash lenses. Primary clastic material is poorly resolved, but clearly labile and almost entirely volcanomict and/or tuffaceous material, if only by analogy with associated specimens. The rock is pervaded by fine-grained diopside, introduced in part along irregular discontinuous fractures and microfaults. Locally, this phase is accompanied by colourless tremolite. Ultrafine saussuritic material stains poorly resolved clastic feldspar particles and the extremely fine feldspathic matrix. Accessory titaniferous opaques are altered to cloudy, poorly crystalline clots and films of ?sphene.

This rock carries accessory, more or less evenly disseminated, fine-grained pyrrhotite, pyritised in part and locally oxidised.

201 009 (T.S. 26852)
This rock is a relatively siliceous sediment best termed a volcanomict lithic sandstone.

The framework (approx. 70 %) is bedded with a dimensional orientation and with grainsize variations, locally graded, on a millimetric scale. Sortin is moderate to good in the silt to fine sand range, and grain shapes are subangular to subround. Major components are quartz (40-50 %) and argillised, microcrystalline volcanic rock fragments with subordinate, similarly altered and poorly resolved feldspar (total 50 %). Accessories include clastic opaques, detrital biotite flakes, and partly overgrown detrital tourmaline (dravite, blue and green-brown schorl). In comparison with the associated greywackes, this rock is relatively siliceous, better sorted and less distinctly

turbidite-like.

The matrix consists of argillaceous matter and microcrystalline quartz and is pervasively stained with fine-grained titaniferous phlogopite. This phase was introduced in part on discontinuous siliceous veins and pseudomorphs the clastic mica flakes. It is a fairly common metasomatic phase, occurring for example at Renison and Mt. Bischoff.

201 012 (T.S. 26853)
This rock is a finely laminated turbidite-like siltstone, extensively altered and with an incipient slaty cleavage intersecting bedding at around 40° in the section plane. The sediment is locally slumped and elsewhere weakly microfaulted. Bedding is planar, typically subtly graded, and is locally lenticular to low angle transcurrent. Clastic material is typically evenly sorted in the silt range (mean 20 μ) with occasional clasts of fine sand sizing (max. about 100 μ). This material is poorly resolved, but essentially similar to that in associated volcanomict sediments. In comparison, however, this rock is characterised by splintery to angular shapes, no doubt, in part at least, due to shard-like features. Thus, the rock has a relatively marked tuffaceous character. There are similarities with the fine ashy partings in associated turbidites. Fine clastic opaques are common and are distinctly bedded.

Alteration is quite marked with pervasive development of extremely fine-grained tremolite-actinolite. Fine-grained Fe-sulphide comprises an accessory phase of distinctly banded distribution.

201 006 (T.S. 26854)
This is a rather classical spotted hornfels developed in a weakly laminated labile pelite. The rock is very fine-grained and mineralogy is partly obscure. Staining confirms a quartzofeldspathic composition, however, and the rock may represent a very fine ash. This tends to be confirmed by the presence of finely laminated ultrafine accessory opaques analogous to those in ash partings in associated turbidites.

The rock is pervasively stained with very fine, random, titaniferous phlogopite (sim. 201 009). Fresh cordierite poikiloblasts (mean 250 μ) are common throughout. Discontinuous quartz veinlets with accessory phlogopite and minor traces of pyrrhotite occur sporadically.

201 004 (T.s. 26855)
This rock is a slumped and altered intercalation of fine-grained lithic sandstone and quartzofeldspathic pelite.

The sandstone is very similar to 201 009, but relatively fine-grained and with a more angular framework. This sediment includes sparse to

accessory devitrified shards (mean 25-30 μ), which appear to have been mildly abraded. The rock is clearly tuffaceous and relatively unreworked in comparison with 201 009.

The pelite is similar to 201 006 and occurs in random rafts, distorted bands and irregular clast-like zones. This rock is characterised by a more or less continuous mosaic of cordierite poikiloblasts (mean 150 μ) similar to those in the previous specimen.

The rock as a whole is pervasively stained with random, fine to ultrafine titaniferous phlogopite. Accessory fine-grained pyrrhotite occurs as randomly disseminated particles and sparse, highly discontinuous films.

D. Cowan, B. Sc.

APPENDIX B

Rock Chip Sample Analyses.

928

Abminco Exploration — GEOCHEMICAL SAMPLE LEDGER

PROJECT	BSS SIEVE SIZE CODE - MESH NUMBER	SAMPLE TYPE CODE	CARD PUNCH PRINT / VERIFY	DATE	SHEET
MEREDITH	A 200, B 150, C 100, D 80, E 60, F 40, G 30, H 20, T = TOTAL	Oxidized products O; [X] Fresh rock R; Stream sediments S; Weathered bedrock W; Surface transported T; Residual soil E; Mine dump M	YES [ ] NO [ ] / YES [ ] NO [ ]	2/79	1

DETAILED SAMPLING FROM CONTACT CREEK, ON WHYTE RIVER, REGION

EASTINGS	NORTHINGS	SAMPLE NUMBER	DEPTH in CMS		SIZE FRACTION	Sample Type	Cu	Pb	Zn	Sn	W	GEOLOGICAL LOG
		234082										Mafic tuff (arenite)
		234084										Mafic tuff with chlorite and sulphide + veins, chert layer.
		234085										Veins, chert with chlorite and sulphide
		234086										Black sediment, slightly micaceous.
		234087										Cherty sulphide layers in black argillite. py, po mineralization
		234088										Altered medium grained mafic (?) flow.
		234089					560	100	90	<5	<20	same as 234087
		90					90	100	50	<5	<20	same as 234087
		91					60	140	55	<5	20	same as 234087
		92					50	70	110	<5	<20	same as 234087
		93					100	80	50	<5	<20	same as 234087
					CHECK →		150	80	30			
		94					145	80	30	<5	<20	same as 234087
		95					10	80	90	<5	<20	same as 234087
		96					55	40	60	<5	<20	same as 234087
		97					60	110	65	<5	<20	same as 234087
		98					85	130	480	<5	<20	same as 234087
		99					50	210	150	<5	<20	same as 234087
		100										Pale green ultramafic associated with finely layered tuff.

OPERATOR D.M.R. COMPUTER CHECK PLOTTER DATE

151029

Abminco Exploration — GEOCHEMICAL SAMPLE LEDGER

029

PROJECT	BSS SIEVE SIZE CODE - MESH NUMBER	SAMPLE TYPE CODE	CARD PUNCH PRINT / VERIFY	DATE	SHEET
MEREDITH	A 200 D 80 G 30 B 150 E 60 H 20 C 100 F 40 T = TOTAL	☐ OXIDIZED PRODUCTS O ☒ FRESH ROCK R ☐ STREAM SEDIMENTS S ☐ WEATHERED BEDROCK W ☐ SURFACE TRANSPORTED T ☐ RESIDUAL SOIL E ☐ MINE DUMP M	YES ☐ NO ☐ YES ☐ NO ☐	2/79	2

EASTINGS	NORTHINGS	SAMPLE NUMBER	DEPTH cms	SIZE FRACTION (Sample Type)	METAL VALUES PPM	GEOLOGICAL LOG
		234133				Fine grained mafic flow or tuff altering to chert.
		134				Pale grey-green (?) ultramafic with large as if porphyritic.
		135				Mafic tuff with coarse (1-2mm rock fragments.
		136				Fine mafic tuff / mica siltstone.
Whyte bridge. Mt. St. Rd.		234079				Black mica sandstone
400 w of Whyte bridge		80				Mafic greenstone or lithic siltstone
		81				Altered ultramafic, (?) phenocrysts of amphibole after (?) pyroxene.
		83				Mafic volcanic.
		234127				Fine grained greenstone.
Castray River.		28				Grey stylolitic limestone.
		29				White foliated limestone.
		30				lithic tuff / mica siltstone
		31				Alt. u/m tuff with Carbonate.
		32				As for 234132

OPERATOR D.M.R. COMPUTER CHECK PLOTTER DATE

151030

Abminco Exploration — GEOCHEMICAL SAMPLE LEDGER

030

PROJECT: MEREDITH

BSS SIEVE SIZE CODE - MESH NUMBER: A 200 D 80 G 50; B 150 E 60 N 20; C 100 F 40 T = TOTAL

SAMPLE TYPE CODE: ☐ OXIDIZED PRODUCTS O; ☒ FRESH ROCK R; ☐ STREAM SEDIMENTS S; ☐ WEATHERED BEDROCK W; ☐ SURFACE TRANSPORTED T; ☐ RESIDUAL SOIL E; ☐ MINE DUMP M

CARD PUNCH PRINT: YES ☐ NO ☐ VERIFY: YES ☐ NO ☐

DATE: 22/2/79

SHEET: 1

EASTINGS	NORTHINGS	SAMPLE NUMBER	DEPTH FT & CMS	SIZE FRACTION	Sample Type	Sn	W	Cu	Pb	Zn	GEOLOGICAL LOG
Whyte River near 201151		234082				NOT ASSAYED					Dark green bedded basic tuff; V. fine grained; some syngenetic py.
Whyte River – altered turbidite location.		206983				4	<10	125	70	40	Diopside rock with 20% py as aggregates and veins to 3 cm.
As above		206984				6	<10	40	45	20	As above → 10 % sulphide
50m. S. of location		206985				<4	<10	45	30	15	Altered turbidite with py. aggregates to 2mm.
5m. W. of location		206986				4	10	50	55	60	Altered turbidite. 3-5 % sulphide
In base of creek		206987				4	<10	15	40	35	Altered turbidite. 5% sulphide
S.W. side of Creek.		206988				8	<10	55	20	80	Altered greywacke - 5% sulphide
100m. S. of above. local.											
In. creek 20m. S. of		206989				4	<10	35	20	30	Basic igneous greywacke - alter
206986 on N. side of creek.											

151031

OPERATOR | COMPUTER | CHECK | PLOTTER | DATE

Abminco Exploration — GEOCHEMICAL SAMPLE LEDGER

031

PROJECT	DSS SIEVE SIZE CODE - MESH NUMBER	SAMPLE TYPE CODE	CARD PUNCH PRINT / VERIFY	DATE	SHEET
MEREDITH	A 200 D 80 G 30 B 150 E 60 H 20 C 100 F 40 T = TOTAL	☐ OXIDIZED PRODUCTS O ☒ FRESH ROCK R ☐ STREAM SEDIMENTS S ☐ WEATHERED BEDROCK W ☐ SURFACE TRANSPORTED T ☐ RESIDUAL SOIL E ☐ MINE DUMP H	YES ☐ NO ☐ / YES ☐ NO ☐	22/2/79	2

EASTINGS	NORTHINGS	SAMPLE NUMBER	DEPTH	SIZE FRACTION	Type	METAL VALUES PPM Sn	W	Cu	Pb	Zn	GEOLOGICAL LOG
~200m. S of turbidite location.		206990				4	10	5	15	55	Silty Pelite
Turbidite location.		206991				6	<10	65	45	80	Sulphide rich vugh sample
~200m S. of turbidite zone.		206992				<4	<10	65	25	70	Uralitized microgabbro.
100m. N. of Contact Creek. -(?)float.		206993				4	10	50	20	55	Basic tuffaceous greywacke with 5% sulphide.
20m. W. of Contact Creek on N. side of Whyte River.		206995				4	10	5	10	5	Meredith Granite - Adamellite with minor tourmaline.

OPERATOR C.H.Y. COMPUTER CHECK PLOTTER DATE

151032

APPENDIX C

Airphoto Interpretation Notes

by I. B. Freytag.

033

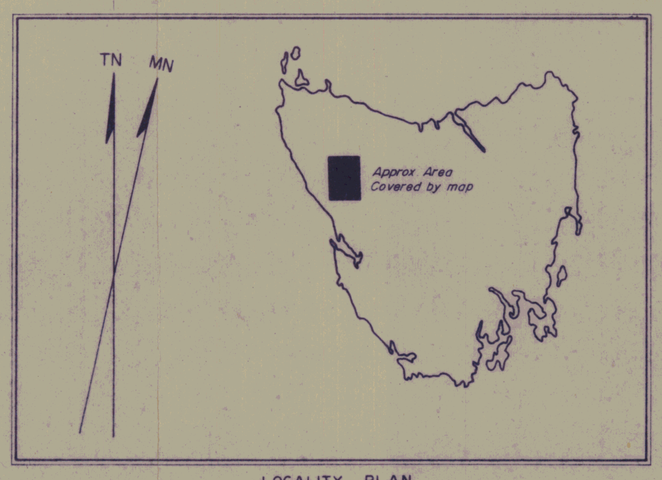
151034

ANOMALY NO.	DESCRIPTION
53	Pronounced Foliation in Meredith Granite.
56	Distinct drainage anomaly in granite. Major fracture (?Fault) strikes NW through this zone. Could be tension fracturing, alteration?
60	Heavily wooded alluvium ? Tin possibilities.
71	Probable granite contact based on prominant narrow band of tall timber with light tone. Jointing intensity decreases outside contact, which also appears to be very irregular due to effect of cross joints.
76	Distinct drainage anomaly with elongate NW-SE dark smooth texture body of rock at centre - probably intrusive.
78	Belt of rock which appears to lack the joint system of the granite to the E and S of it, and contrasts markedly with the intense dendritic drainage to the west. Note radial feature at S end.
84	Drainage/vegetation anomaly, linear marginal to central fault in granite. Could be fracture of alteration zone, raft? or pendant.

350 000mE

360 000mE

370 000mE



LOCALITY PLAN

MAGNET

5410 000mN

5400 000mN

5390 000mN

△MT CLEVELAND

CLEVELAND

Mount Wright
Heazlewood
Old Jasper
Boxing Day
New Jasper
Bells Reward
Discoverer
Godkin Extended
GODKIN
Washington
Washington Hay
Confidence

Sn ANOMALY WHYTE RIVER
SCHEELITE CREEK AREA
CONTACT CREEK AREA
MT STEWART
Mt Stewart
Sn ANOMALY MT STEWART MINE
UPPER CASTRAY RIVER AREA
Zn ANOMALY
CIRCULAR FEATURE
WOMBAT FLAT
South Bischoff

Heazlewood River
Castray River
Loughman Creek
Watson River
Johnson Ck
Betts Track
To Waratah

Floodplain Tb with sporadic exposures of €am along the granite contact

△MT. MEREDITH

△MT. LIVINGSTON

MT. LINDSAY MINE

MT. RAMSAY
△ Trig 455

Yellowband Ck

Whyte River
Offtake Creek
Post
Rocky River
Stanley River
Parsons Hood
Harman River
Watson River
Little Watson River

Tertiary	Tb	Porphyritic Alkali Olivine Basalt
Quarternary	Qra	Alluvium and swamp deposits, (Sn) Tin bearing
Silurian	Sc	Crotty Quartzite
Ordovician	Og	Gordon Limestone
Cambrian	€am	Turbidites and lithic sandstones and pelites
Precambrian	P€o	Oonah Quartzite and slate
	P€w	Whyte Schist

Igneous Rocks

Jurassic	Jd	Dolerite
Devonian	Dp	Quartz porphyry
		Microgranite dyke
	Dg	Meredith granite
Cambrian	€i	Intermediate igneous (€d: dolerite)
	€b	Basic igneous suite (€bs, Spillite)
	€u	Ultrabasic igneous suite (pyroxenite & peridotite)
	€s	Serpentinite
	€	Undifferentiated, predominantly igneous rocks

151035

5 cm

1 0 1 2 3 4 5 Kilometres

Aberfoyle Exploration

79-1370

2750

Geology	N.W. TASMANIA	Location code
Drawn	MEREDITH E.L. 16/78	Date October, 1978
Traced R.J.E.	Geological Summary Map	Scale 1:50,000
Checked	(after D.I. Groves 1962-67)	Plate No MER 3
Revised by J.R.T. Date 1/6/79		

5 cm

STATE GN MN

11° 18'

Magnetic north correct 1978 - annual change easterly by 04'

339/405	347/405	355/405
339/400	**347/400**	355/400
339/395	347/395	355/395

Index to adjoining sheets

151036 79-1370

Aberfoyle Exploration Pty Ltd

Geology JRT JW

Drawn JRT

Traced RJE

Checked

Revised by Date

2756

NORTH WEST TASMANIA

DUNDAS TROUGH

MEREDITH E.L.16/78

Surface Outcrop Geology

Location code

Date June, 1979

Scale 1:10,000

Plate No Mer 4 - 347/400


Creek
Fulfords
Creek
Creek
PIPELINE AND SERVICE ROAD
Hall
Broderick
River
Savage
Little
SAVAGE RIVER
SAVAGE
Armstrong
RIVER
BURNT
SPUR
OPEN
CUT
MINE
HEC
SAVAGE RIVER
MINE
TAILINGS
DAM
Creek
Nineteen Mile
Creek
Lie
Linger
and
to
CORINNA
ms grey + green siltstone sheared in part, with boudinaged layers common
Gravel pit
Contact
heavily sheared, grey + red siltstone - fd 90→80m
Whyte Schist consisting
ms quartzite
muscovite schists
chlorite - talc schists
D₁ axial plane 90 → 215m (slaty cleavage)
Def. history ? D₁ slaty cleavage event
D₂ sporadic cren cleavage & isoclinal folding
Whyte Schist
Creek
Alfords
black carbonaceous shale (w.s.)
ms black siltstone
So 90→90m
So 80→110m
So 60→90m
RIVER
ms red & grey fine mica sltst.
qtzite & brn. mica schist
black carbonaceous shale
red, black - cream bedded siltstones & mudstones
ms red - black siltstone with numerous small (≈1m) dol. dykes est. vert. dip, strike ≈ NE / SW
ms black siltstone
Whyte Schist
E.L. 16/78
HEAZLEWOOD
ms black siltstone
bedded black siltstone 80 → 255 m minor dissem. po/py (<1%)
black m.s. lithic siltstone feld. fragments to 1·0mm
vughy, brecciated ? red & black siltstone
ms black fine mica siltstone
5410000 N
9000 N
8000 N
7000 N
6000 N
5405000 N
347000 E
348000 E
349000 E
350000 E
351000 E
352000 E
353000 E
354000 E
355000 E

151037

339/410	347/410	355/410
339/405	**347/405**	355/405
339/400	347/400	355/400

5 cm

Aberfoyle Exploration Pty Ltd

Geology: J.R.T. J.W.	NORTH WEST TASMANIA 79-1370	Location code:
Drawn: J.W.	DUNDAS TROUGH	Date: June, 1979
Traced: JJB R.J.E.	MEREDITH E.L. 16/78	Scale: 1:10,000
Checked:	Surface Outcrop Geology	Plate Nº Mer 4 - 347/405
Revised by: Date:	2755	

151038 79-1370

Base sheet enlarged from 1:31,680 Tasmanian Lands Dept Topo

Northern section enlarged from 1:50,000 Tasmanian Lands Dept Topo.

STATE GN MN 11° 18'

Magnetic north correct 1978 - annual change easterly by 04'

347/405	355/405	363/405
347/400	355/400	363/400
347/395	355/395	363/395

Index to adjoining sheets

Aberfoyle Exploration Pty Ltd

Geology	JRT	JW
Drawn	JRT	JW
Traced	JJB	RJE
Checked		
Revised by	Date	

NORTH WEST TASMANIA
DUNDAS TROUGH
MEREDITH E.L.16/78
Surface Outcrop Geology

2752

Location code	
Date	July, 1979
Scale	1:10,000
Plate Nº	Mer 4 - 355/400

151039

347/410	355/410	363/410
347/405	355/405	363/405
347/400	355/400	363/400

Index to adjoining sheets

Aberfoyle Exploration Pty Ltd

Geology	J.R.T. J.W.
Drawn	J.R.T. J.W.
Traced	R.J.E.
Checked	
Revised by	Date

79-1370

NORTH WEST TASMANIA
DUNDAS TROUGH
MEREDITH E.L. 16/78
Surface Outcrop Geology

2754

Location code	
Date	June, 1979
Scale	1:10,000
Plate No	Mer 4 - 355/405

cg, tourmalinised granite breccia (fault ? breccia)
SP 201114

E.L. 16/78

5 cm

STATE GN MN
11°18'
Magnetic north correct 1978 - annual change easterly by 04'

355/400	363/400	371/400
355/395	363/395	371/395
355/390	363/390	371/390

Index to adjoining sheets

151040 70-1350

Aberfoyle Exploration Pty Ltd

Geology J R T J W	NORTH WEST TASMANIA	Location code
Drawn J R T J W	DUNDAS TROUGH	Date July, 1979
Traced R J E	MEREDITH E.L. 16/78	Scale 1:10,000
Checked	Surface Outcrop Geology	Plate No Mer 4 - 363/395
Revised by Date	2753	

5405000 N
363000 E
364000 E
365000 E
366000 E
367000 E
368000 E
369000 E
370000 E
371000 E
4000 N
3000 N
2000 N
1000 N
5400000 N
E.L. 1/63
E.L. 16/78
WILSON
RIVER
Moor
Creek
Betts
Track
Creek
Johnson
Creek
Qra Sn
poorly sorted congl
So 80 — 105°M
S1 30 — 010°M
Hornfelsed congl with
chl porph
So 70 — 145°M
S1 60 — 030°M
Hornfelsed, poorly sorted congl
moderately rounded cobbles up to 20cm across
230042
high Magnetite content in alluvium
mcg Porph qfb G
230046
Small aplite dykes
with Magnetite (?) crystals and
Mn stained fracture surfaces
hornfelsed congl
floated hornfelsed congl
and undifferentiated basic volc
Abundant volc detritus
common within congl
c g qfb G dyke – texturably variable
230047
high Magnetite content
in alluvium
white, weathered serp
Approx position
of granite contact
230043
Strongly porph (K-spar)
qfb G
serp
grey hornfelsed qtzite
230044
serp ~10% Magnetite
serp after Augite
Alt basic volc with
fracture surface py/po
230045
floated hornfelses &
undiff basic volcs
201844
Zoned qtz vein with
Magnetite / minor py / v. minor Gn
Contacts obscured
Old workings –
small dam
high magnetite
content in alluvium
c g qfb G
fcg qfb G with large fq phenos
fqb G – variable texture
c g G
major jointing strikes
250°M and dips vert
major jointing strikes 255°M
and dips vert
fmg qfb G with qf phenos
Numerous textural variations

Base sheet enlarged from 1 31,680
Tasmanian Lands Dept Topo

Northern section enlarged from 1 50,000
Tasmanian Lands Dept Topo.

STATE G.N   MN

11°18'

Magnetic north correct 1978
– annual change easterly by 04'

5 cm

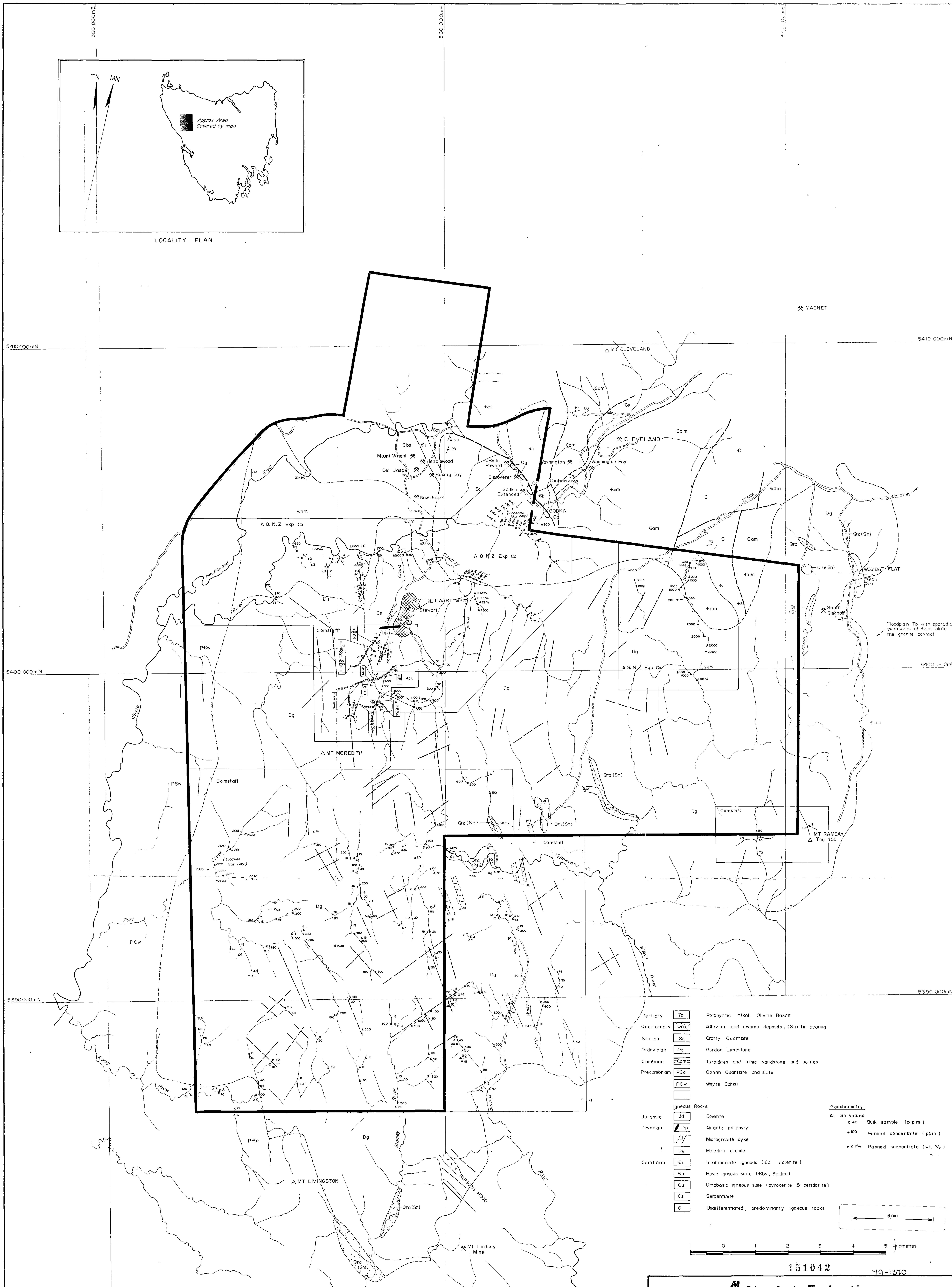
355/405	363/405	371/405
355/400	**363/400**	371/400
355/395	363/395	371/395

Index to adjoining sheets

151041 79-1370 2751

Aberfoyle Exploration Pty Ltd

Geology JRT J.W	NORTH WEST TASMANIA	Location code	
Drawn JRT	DUNDAS TROUGH	Date	June, 1979
Traced JJB RJE	MEREDITH E.L.16/78	Scale	1:10,000
Checked	Surface Outcrop Geology	Plate Nº	Mer 4 - 363/400
Revised by Date			



350 000mE
360 000mE
370 000mE
5410 000mN
5400 000mN
5390 000mN
TN
MN
Approx Area
Covered by map
LOCALITY PLAN
MAGNET
MT CLEVELAND
CLEVELAND
Mount Wright
Heazlewood
Old Jasper
Boxing Day
New Jasper
Bells Reward
Discoverer
Godkin Extended
Washington
Washington Hay
Confidence
GODKIN
BETTS TRACK
To Waratah
WOMBAT FLAT
South Bischoff
Floodplain Tb with sporadic exposures of €am along the granite contact
A & N.Z Exp Co
A & N Z Exp Co
Local €d
Heazlewood River
Scheelite Ck
Loughnan Creek
Castray River
MT STEWART
Mt Stewart
Comstaff
MT MEREDITH
Whyte
Johnson Ck
MT RAMSAY
Trig 455
Yellowband Ck
(Location Nos Only)
Post
Rocky River
Wilson River
Little Wilson River
Harman
Stanley River
PARSONS HOOD
MT LIVINGSTON
Mt Lindsay Mine
Tertiary
Tb
Porphyritic Alkali Olivine Basalt
Quarternary
Qra
Alluvium and swamp deposits, (Sn) Tin bearing
Silurian
Sc
Crotty Quartzite
Ordovician
Og
Gordon Limestone
Cambrian
€am
Turbidites and lithic sandstone and pelites
Precambriam
P€o
Oonah Quartzite and slate
P€w
Whyte Schist
Igneous Rocks
Jurassic
Jd
Dolerite
Devonian
Dp
Quartz porphyry
Microgranite dyke
Dg
Meredith granite
Cambrian
€i
Intermediate igneous (€d dolerite)
€b
Basic igneous suite (€bs, Spillite)
€u
Ultrabasic igneous suite (pyroxenite & peridotite)
€s
Serpentinite
€
Undifferentiated, predominantly igneous rocks
Geochemistry
All Sn values
x 40 Bulk sample (p p m)
• 100 Panned concentrate (ppm)
• 2 1% Panned concentrate (wt. %)
5 cm
1 0 1 2 3 4 5 Kilometres

151042

79-1370

Aberfoyle Exploration 2757

Geology	NW TASMANIA	Location code
Drawn	MEREDITH E.L. 16/78	Date June, 1979
Traced R J E	COMPILATION PLAN SHOWING	Scale 1 50, 000
Checked	OTHER COMPANY GEOCHEM ACTIVITY	Plate Nº MER 6
Revised by JRT Date 1/6/79	(Comstaff & A N Z Exp Co)	


350 000mE
360 000mE
370 000mE
5410 000mN
5400 000mN
5390 000mN
TN
MN
Approx Area Covered by map
LOCALITY PLAN
MAGNET
MT CLEVELAND
CLEVELAND
Mount Wright
Heazlewood
Old Jasper
Boxing Day
New Jasper
Bells Reward
Discoverer
Godkin Extended
GODKIN
Washington
Washington Hay
Confidence
BETTS TRACK
To Waratah
WOMBAT FLAT
South Bischoff
Floodplain Tb with sporadic exposures of €am along the granite contact
MT STEWART
Mt Stewart
MT MEREDITH
MT RAMSAY
Trig 455
MT LIVINGSTON
PARSONS HOOD
Mt Lindsay Mine
Heazlewood River
Whyte River
Office Creek
Rocky River
Scheelite Ck
Loughnan Creek
Castray River
Wilson River
Johnson Ck
Yellowband Ck
Little Wilson River
Harman River
Stanley River
Local €d
76
78
71
56
53
60
84
Qra(Sn)
Tertiary Tb Porphyritic Alkali Olivine Basalt
Quarternary Qra Alluvium and swamp deposits, (Sn) Tin bearing
Silurian Sc Crotty Quartzite
Ordovician Og Gordon Limestone
Cambrian €am Turbidites and lithic sandstones and pelites
Precambriam P€o Oonah Quartzite and slate
P€w Whyte Schist
Igneous Rocks
Jurassic Jd Dolerite
Devonian Dp Quartz porphyry
Microgranite dyke
Dg Meredith granite
Cambrian €i Intermediate igneous (€d dolerite)
€b Basic igneous suite (€bs, Spillite)
€u Ultrabasic igneous suite (pyroxenite & peridotite)
€s Serpentinite
€ Undifferentiated, predominantly igneous rocks
Geophysical anomaly
60 Airphoto anomaly
5 cm
1 0 1 2 3 4 5 Kilometres

151043

79-1370

Aberfoyle Exploration 2758

Geology after Groves	NW TASMANIA	Location code
Drawn	MEREDITH E.L. 16/78	Date June, 1979
Traced RJE	COMPILATION PLAN SHOWING AIRPHOTO	Scale 1 50,000
Checked	AND GEOPHYSICAL ANOMALIES	Plate No MER 7
Revised by JRT Date 1/6/79		

ROCK TYPE

G	-	Granite
lst	-	Limestone
sst (sts) slst	-	Siltstone
ss	-	Sandstone
ba	-	Black argillites containing rarer arenaceous layers and micaceous varieties.
shg	-	Grey shale or mudstone
shb	-	Brown + purple shale or mudstone
vt	-	Basic tuff, includes tuffaceous shales. lithic and lapilli beds, tuff breccias and volcanic grenites.
vb	-	Basic volcanic, probably lavas
volc (s)	-	Undifferentiated Volcanics
dol	-	Dolerite
cong.	-	Conglomerate
u/m	-	Ultramafic
serp	-	Serpentinite
pyrox	-	Pyroxenite
gst	-	Greenstone
W.S.	-	Whyte Schist

MINERALS

py	-	Pyrite
apy	-	Arsenopyrite
po	-	Pyrrhotite
cpy	-	Chalcopyrite
Cu	-	Copper
Mag	-	Magnetite
Sn	-	Tin
pyrox.	-	Pyroxene
opx	-	Orthopyroxene
diop	-	Diopside
amph	-	Amphibole
trem	-	Tremolite
act	-	Actinolite
hb (hnbide)	-	Hornblende
qtz (qt) q	-	Quartz
feld (f)	-	Feldspar
k spar	-	Potassic Feldspar
plag	-	Plagioclase
bio (b)	-	Biotite
cord	-	Cordierite
m	-	Mica
musc	-	Muscovite
tm (tourm)	-	Tourmaline

ALTERATION

alt	-	Alteration
sil	-	Silicified
carb	-	Carbonaceous
ch	-	Chert, undifferentiated
hnflsd	-	Hornfelsed - Contact Metamorphosed

COLOUR

brn	-	Brown
grn	-	Green
bl	-	Black

TEXTURE

f	g	- fine	grained
m	g	- medium	grained
c	g	- coarse	grained
lge		- Large	
ang		- Angular	
consol		- Consolidated	
frag		- Fragment (s)	
br		- Breccia	
l		- Lithic	
v		- Vitric	
porph		- Porphyritic	
pheno		- Phenocrysts	
fol		- Foliated	
dissem		- Disseminated	

MISCELLANEOUS

201604/ SP 201604	- Rock samples
	- Float
	- Outcrop and geological contact
	- Geological contact
84 → 321°M	- Bedding reading unless otherwise specified
	- River or creek
	- Camp sites used during the coarse of the Exploration Programme, 1979
	- 4 WD Tracks
	- Walking track
	- Highway
	- Exploration Licence boundary

151044

2759

79-1370

Aberfoyle Exploration Pty Ltd

Geology:	NORTH WEST TASMANIA	Location code:
Drawn:	MEREDITH E.L.16/78	Date: July, 1979
Traced: R. J. E.	Preliminary Geological Legend	Scale:
Checked:		Plate No MER 8
Revised by: Date:		