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ABERFOYLE EXPLORATION PTY. LTD.

WELDBOROUGH E.L. 19/78

PROGRESS REPORT

FOR THE SIX MONTHS ENDING

FEBRUARY 9, 1981

OPEN FILE

R.M. Joyce,
Geologist.

February 1981.

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LIST OF PLATES

SUMMARY

A six hole percussion drill programme designed to test around the Cream Creek workings within Weldborough E.L. 19/78 was terminated at the completion of two holes, due to the unsuitability of the drill rig.

The drilling was designed to test for greisen sheet tin mineralisation within the Blue Tier Batholith.

After very slow progress, the initial hole (PH.1) was abandoned at 40.2 m due to excess water. A second hole (PH.2) was in progress at (15.2 m) when drilling was halted due to insufficient sample return.

INTRODUCTION

Weldborough E.L. 19/78, in North East Tasmania, was pegged with a view to locating economic greisen style mineralisation in the Blue Tier Batholith. (Plate WELD. 2).

The licence area includes the old Cream Creek Mine from which approximately 4445 tons of ore were removed in the period between 1866 and 1929.

The Cream Creek area was drilled by Mt. Lyell in 1907 with poor results. Recent exploration by Geophoto Resources (for Texins Development) in 1974 also failed to uncover economic mineralisation.

Current exploration is aimed at defining large Sn bearing greisen sheets of the Anchor type. Trace element geochemistry, particularly Rb/Sr, is being used to aid this work.

GEOLOGY AND MINERALISATION

The licence is underlain by granites of the Devonian Blue Tier Batholith. The oldest and most extensively outcropping granite type is the Poimena pluton (Dbapc), a coarse grained porphyritic biotite granite/adamellite. Late stage leucocratic "tin" granites (Dbae) intrude the older granites and mineralisation occurs as sheet like bodies at high levels of the "tin" granite masses, close to the contact with overlying Dbapc.

The "tin" granites are *equi*granular fine medium grained muscovite rich granite/adamellites.

Other minor granite variants, whose spatial and genetic relationships with the major granites are not well understood, occur within the licence.

Greisen sheet deposits in the Blue Tier Batholith consist of flat lying sheet like bodies of greisen and greisenised granite, occuring sub-parallel to the tin granite/older granite contact (Dbae/Dbapc).

Greisenisation occurs within the late stage tin granite masses and is attributed to the development, through extensive fractionation, of a water saturated melt in which Sn, F and other incompatible elements are concentrated.

As the main zones of tin mineralisation occur within the top 40 metres (e.g. Anchor) of the tin granites (Dbae), those that are still roofed, i.e. covered by older Dbapc, obviously have the best potential for large tonnage.

Indications of near surface tin granite (i.e. thin cover of Dbapc), include:

(i) Greisen veining in Dbapc.

(ii) Abundant aplitic and pegmatitic dykes in Dbapc.

Drill sites were selected both to improve geological knowledge of the area, and to establish whether potential for economic mineralisation exists.

Reconnaissance mapping and rock chip sampling was conducted in the Chids Creek area near the junction with the Weld River. Differentiated granite was noted with high Rb/Sr. Results are tabulated in Appendix 1.

DRILLING

Drilling was undertaken on the premise that significant mineralisation could occur beneath a shallow cover of older granite (Dbapc). As the relationships between the different granite types in the area are not well established, several holes were designed to test current theories.

A percussion drilling programme was favoured because of the attraction of fast, cheap drilling rates and the production of large samples. The successful application of percussion drilling at Ardlethan and Drake prompted the decision.

A Fox Mobile Percussion Rig mounted on a 4-WD Bedford truck, with an accompanying 700 cfm, 110 psi (low pressure) Compressor was contracted from H.J. Stackpoole, Launceston.

Access to drill sites utilised old logging roads, some of which were badly overgrown. Extensive upgrading of most access tracks was needed, but due to heavy traffic and heavy rain, the roads were accessible only by 4-WD vehicle.

Due to the cumbersome and top heavy nature of the rig, a bulldozer was necessary at each drill site in order to move both the drill truck and the compressor.

Proposed Drill Sites (Plate WELD. 6)

PH.1

Collared 150 m north of the Dbapc/Dbae contact. Greisen veinlets in Dbapc on surface indicate possible proximity of greisen sheet beneath a shallow cover of Dbapc.

As previous models depicted the "tin" granite (Dbae) as a sheet like body, it was thought that the contact between Dbae and the overlying Dbapc would dip shallowly beneath the drill site.

PH.2

Designed to test the vicinity of the old Spink's Prospect. The area contains mildly sericitised aplitic Dbae ("tin" granite). The hole was collared approximately 100 m south of the sluiced area at Spinks, well above the old workings.

PH.3

Drill sited close to the contact between Dbae and Dbapq. This hole is designed to test the depth extent of Dbapq and to aid in interpreting geological relationships in the area.

Dbapq may be either a distinct, younger granite stock, (intruding, but perhaps related to Dbae), or an older, overlying granite, related in age more closely with Dbapc (Plate WELD. 5).

PH.4

This site is close to the top workings at the Old Cream Creek Mine. The hole was designed to pass through a thin cover of Dbapc into mineralised Dbae.

PH.5

200 m south of PH.4, this hole is also collared in Dbapc and positioned close to the Dbapc/Dbae contact. Designed to pass through the shallow cover of Dbapc into Dbae.

PH.6

Designed to test another granite differentiate - Dbapf.

SAMPLING

Samples were taken at 3 m intervals during drilling. As the rig was new several sampling procedures were tried on site before the most successful was chosen. As large quantities of water were encountered below approximately 15 metres, very wet samples were obtained, and fine sample was suspended in water. Thus a large sluice tank was used.

Sample was forced from the hole by air pressure and directed into the tank by a large plastic bucket. Here, fine material could settle from suspension whilst water was sluiced off. The complete sample was removed by shovel and split.

Assaying was performed by CTL assay laboratories. Samples were assayed for Sn, WO_3, Cu, Rb, Sr. See Appendix 1 for assay results.

ASSAY RESULTS FROM DRILL HOLE SAMPLES APPARENTLY OMITTED FROM APPENDIX I BUT PROVIDED ON SECTIONS ILLUSTRATED ON PLATE WELD. 7.

RESULTS AND GEOLOGICAL CONCLUSIONS

Drilling commenced with Hole PH.1 on September 5, 1980. After penetrating a 12 m thick weathered zone, drilling progress became very laborious. Large volumes of water were encountered below 15 m. Very hard fresh porphyritic biotite adamellite (Dbapc) was drilled until the hole was abandoned at 40·2 m. Abandonment was due to the inability of the low pressure (110 psi) air to expell excess water from the hole.

PH.1 failed to intersect the Dbapc/Dbac contact as expected, leading to the conclusion that this contact dips more steeply than previously thought. (Plate WELD. 7).

The second Hole PH.2 was collared on September 12, in slightly greisenised Dbae. Good progress was made through the weathered zone (approximately 12 m), but fresh hard muscovite granite was encountered below this, progress was slow and sample return minimal and the hole was abandoned at 15·2 m.

DRILLING RESULTS (Plate WELD.7)

Although neither of the two holes collared was completed to target depth, some geological information can be obtained from the results:

PH.1

This hole provided no encouragement. Sn values were uniformly low and the hole consisted entirely of unaltered Dbapc. Rb/Sr values gave no indication of any differentiation progression toward Dbae. The fact that Dbae was not encountered at depth suggests that the Dbapc/Dbae contact dips fairly steeply (>30°), which is not in accordance with theories depicting the tin granites (Dbae) as relatively thin, sheet like bodies.

PH.2

The second hole, PH.2 collared above the Spink's sluiced area, intersected patches of greenish greisenised aplitic muscovite granite (Dbae) over a 5 m interval and Rb/Sr ratios indicate extreme differentiation in this zone. Sn values however were low and the alteration was restricted to weak sericitisation. The hole appeared to pass through this altered zone and into fresh Dbae before abandonment.

CONCLUSIONS

The equipment used during the drilling programme was not suited to either the terrain, or the drilling conditions encountered. At Ardlethan, using a high pressure (250 psi) compressor, with 6½" hammer and a button bit, 100 m per shift is averaged. At Weldborough the 100 psi compressor used with 4" hammer and roller bit proved ineffective in hard fresh rock.

Insufficient data was collected during the drilling programme to reach any definite conclusions regarding the economic potential of the area. Several geological observations may however be made:

(i) The contact between Dbapc and Dbae dips at greater than 30^{o} beneath PH.1.

(ii) There is no apparent differentiation progression (reflected in Rb/Sr ratio) in Dbapc as the "tin" granite contact is approached. Further work in the area is needed however, before a definite statement to this effect is possible.

(iii) Variations in Rb/Sr ratio in Dbae ("tin" granite), are reflected in both extent of alteration, and geochemical response.

WORK PROPOSED

Further detailed geological mapping and rock chip sampling with the aid of Rb/Sr trace element geochemistry is proposed prior to further sub-surface evaluation by diamond drilling.

FINANCE

... SEE ATTACHED PAGE ...

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ABERFOYLE EXPLORATION PTY. LTD.

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PROJECT: WELDBOROUGH

	6 MONTHS TO 9 FEBRUARY 1981	YEAR TO DATE FROM 9 AUG 1980	PROJECT TOTAL
Salaries & Wages	4500		8566
Contractors, Consultants			
Geology			
Petrology			
Gridding			
Geophysics			
Geochemistry	-		1676
RAB Drilling			
Diamond Drilling			
Percussion Drilling	4928		4928
Assay	60		60
Other			
Materials	29		254
Accom & Travel	773		1169
Vehicles	470		1135
Communications	-		221
Tenure	182		450
Legal			
Equipment Use			
Sundries	22		80
SUB-TOTAL	10964	10964	18539
ADMINISTRATION	1645	1645	2796
TOTALS	12609	12609	21335

REFERENCES

Young, C.H. 1979 Economic Potential and Geochemical Exploration of the Blue Tier Batholith.

Taylor, J.R. 1980 Aberfoyle Exploration Pty. Ltd., Weldborough E.L. 19/78, Report for the year ended August 9, 1980.

SIGNED: R.M. Joyce

R. M. Joyce,
Geologist.

ENDORSED: C.H. Young.

C. H. Young,
District Manager.

APPENDIX 1

ROCK CHIP SAMPLES RESULTS

CHIDS CREEK AREA

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WELDBOROUGH 3/9/90 1

EASTING	NORTHING	SAMPLE	Sn	WO3	Cu	Rb	Sr	
		252253	90	20	25	400	80	coarse Dbase, aplite dyke nearby.
		252254	160	20	26	900	25	very weath. f-mg. orange equigranular Dbase.
		252255	100	20	10	550	<10	" " " "
		252256	35	<20	10	600	<10	fresh Dbase, rare K-spar phenocrysts.
		252257	70	<20	10	600	<10	coarse porphyritic granite dykes (2m) Dbase?
		252258	240	<20	35	550	10	f-mg Dbase, rare K-spar phenos;
		252259	70	<20	15	550	<10	f-mg Dbase, occ. K-spar phenos. (narrow Dbase veins ne
		252260	50	<20	10	500	<10	M-g Dbase with common K-spar phenos to 3cm.

CHDS Cir
257 253 250
255 256 255
253 254
WELD RIVER

Mining Information — GEOCHEMICAL SAMPLE LEDGER — 015015 — 014

PROJECT	DATE	SHEETS
WELDBOROUGH.	1/8/80	1

EASTINGS	NORTHINGS	SAMPLE NUMBER	Sn	WO3	Cu	Rb	Sr	GEOLOGICAL LOG
		252789	L10	L20	10	550	20	DBAPQ - from COLLIN'S CREEK NEAR UYNIFORD. R.
		252790	25	20	10	650	L10	DBAE - from old mill site, jca Cream Ck + Fraser.
		252791	50	L20	10	440	90	coarse DBAPC - 150 m west of Childs Ck.
		252792	35	L20	10	550	L10	DBAE? - Childs Ck - occ. porph. in K'spar.

570000E
580000E
590000E
600 000 E
5450 000N
5440 000N
Pioneer
RIVER
Herrick
TASMAN HIGHWAY
RINGAROOMA
Area of Drilling. (CREATH CREEK).
E.L. 19/78
Derby
WHD
CREEK
ROAD
CHD CREEK.
River
F.B. Node
Frome
R. WHD
GREAT
RIVER
MISSELROE
WELDBOROUGH
TASMAN HIGHWAY
5440 000N
570000 E
580000 E
590000 E
600 000 E

015016

5 cm

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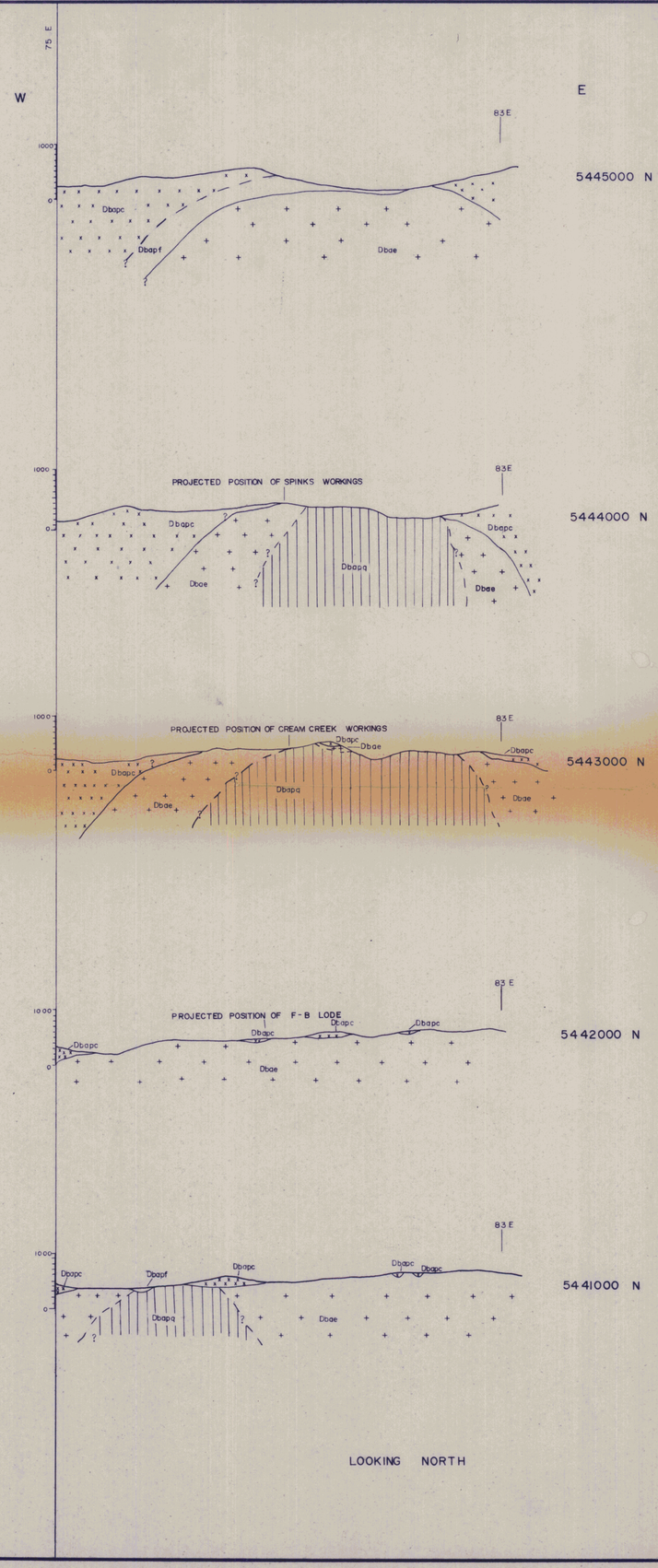
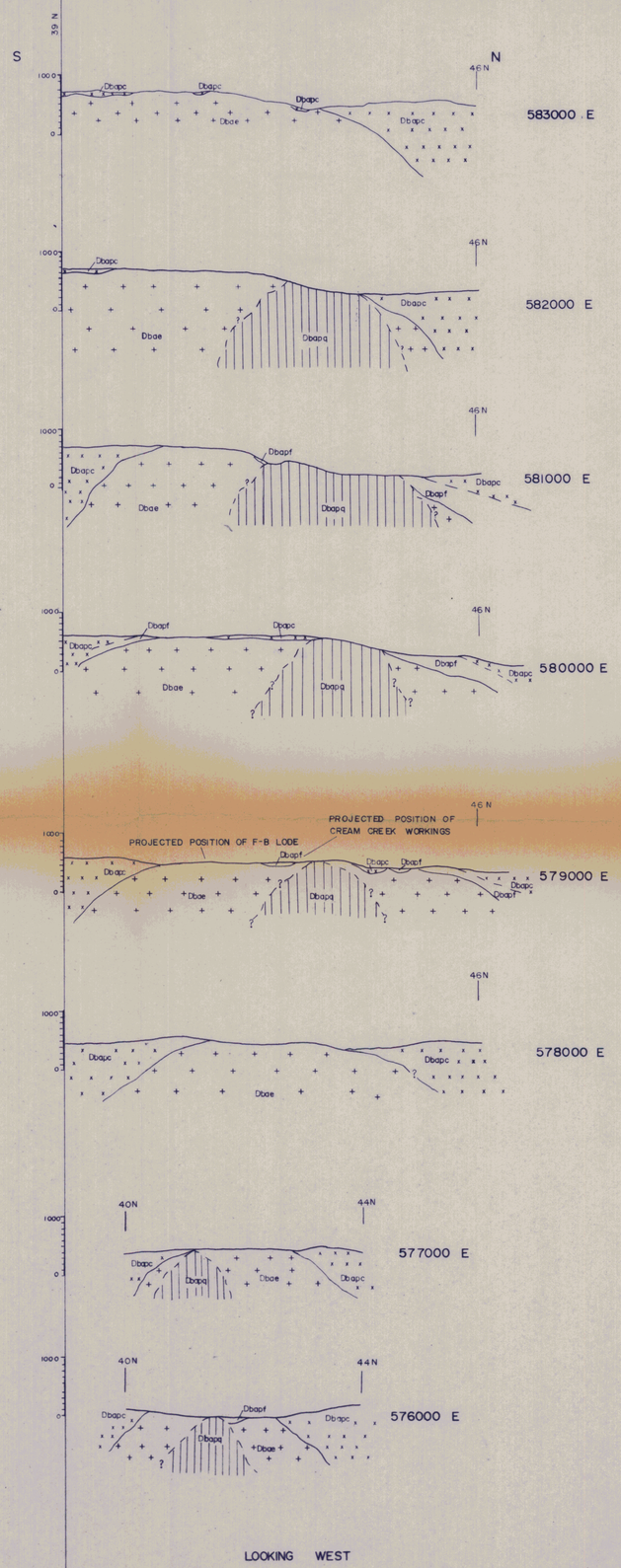
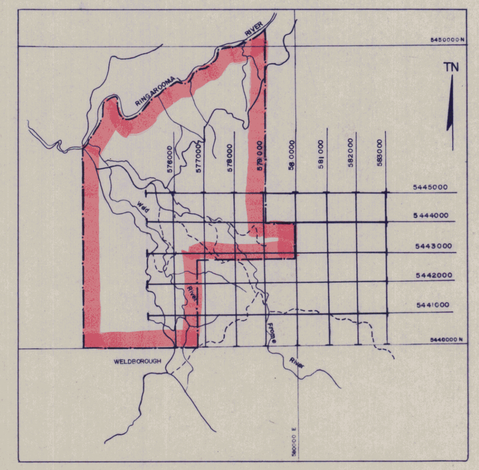
Geology:	NORTH EAST TASMANIA	Location code:
Drawn: R.J.E J.L.R	WELDBOROUGH E.L. 19/78	Date: Nov. 1980
Traced:	LOCATION PLAN	Scale: 1:100,000
Checked:	81-1511 018	Plate No WELD. 2







LOCALITY PLAN
WELDBOROUGH E.L. 19/78
SCALE 1:100,000
(1 Km² grid).

LEGEND

- Dbae — Equigranular fine to coarse grained biotite - muscovite granite / adamellite (rarely porphyritic) ("Tn Granite").
- Dbapq — Porphyritic biotite - muscovite granite / adamellite with phenocrysts of quartz and feldspar.
- Dbapf — Porphyritic fine - medium grained biotite - muscovite granite / adamellite with phenocrysts of feldspar.
- Dbapc — Porphyritic, coarse grained biotite - minor muscovite granite / adamellite.
- Sharp contact
- Gradational contact

5 cm

SCALE 1:50,000

1000 0 1000 2000 3000 4000 metres

NOTE :- (REFER TASMANIAN MINES DEPT. 1:50,000 SERIES RINGAROOMA SHEET)

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Geology: R.M.J	NORTH EAST TASMANIA
Drawn: R.M.J	WELDBOROUGH E.L. 19/78
Traced: J.L.R.	INTERPRETIVE GEOLOGICAL CROSS
Checked:	SECTIONS OF CREAM CREEK AREA
Revised by: Date:	81-1511
Location code:	
Date: Sept. 1980	
Scale: 1:50,000	
Plate No Weld bk. 5	

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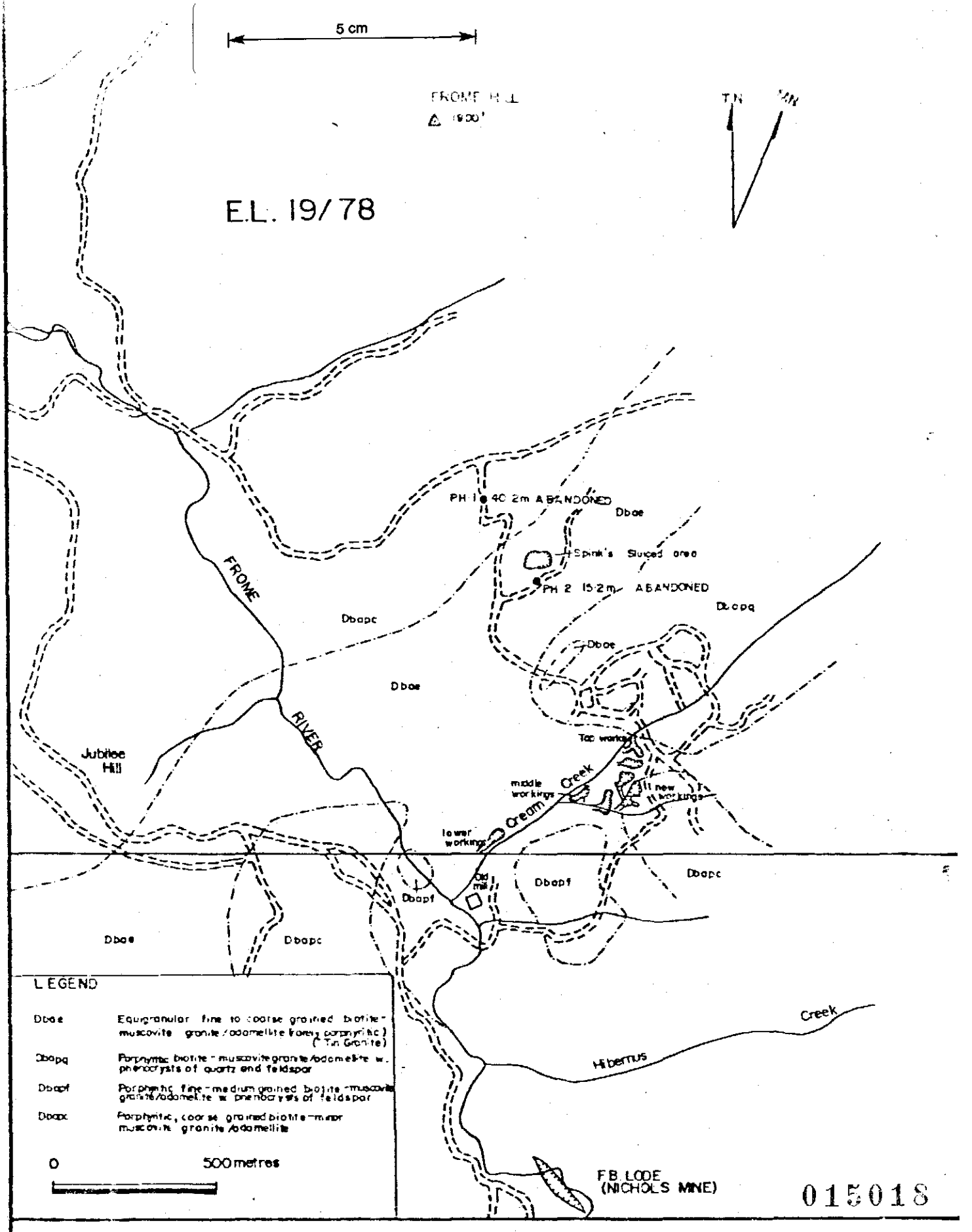

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Aberfoyle Exploration Pty Ltd

81-1511

Drawn: P.M.J	NORTH EAST TASMANIA	Location code:
Traced: J.L.R	WELDBOROUGH E.L.19/78	Date: Sept. 1980
Checked:	PERCUSSION DRILL HOLE LOCATIONS	Scale: As shown

S

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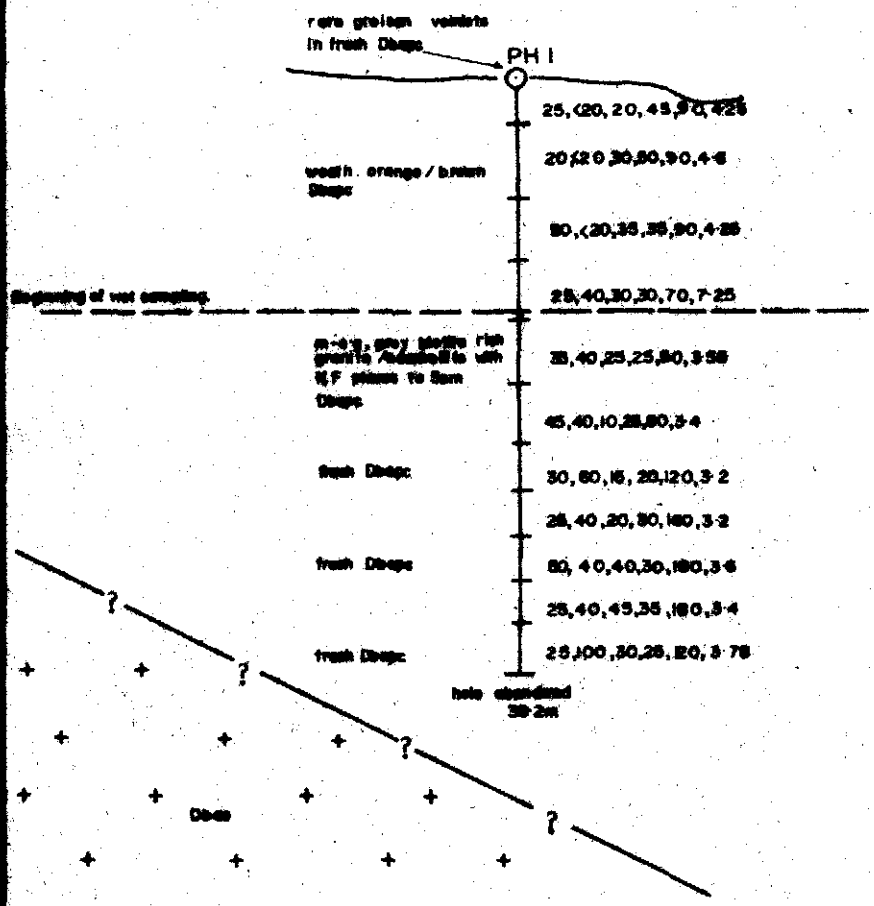

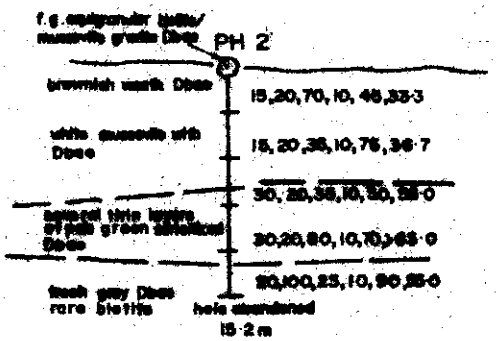

LEGEND

Dbae — Equigranular fine to coarse grained biotite-muscovite granite/adamellite (rarely porphyritic) ("Tin Granite")

Dbopc — Porphyritic, coarse grained biotite-minor muscovite granite/adamellite

Sn, W, Cu, Pb, Zn, Rb/Sr

015019

5 cm

Aberfoyle Exploration Pty Ltd

81-1511

Drawn: R.M.J	NORTH EAST TASMANIA	Location split:
Traced: J.L.R	WELDBOROUGH E.L. 19/78 GEOLOGICAL CROSS SECTIONS	Date: Nov. 1980
Checked:		Scale: 1:500
Revised by: Date:	LOOKING WEST	Plate No WELD. 7