000

19 - 1408.

647001

REPORT NO. TAS/19

APRIL 1979

PREUSSAG AUSTRALIA PROPRIETARY LIMITED

RINGAROOMA JOINT VENTURE
NORTH-EAST TASMANIA

SCOUT-DRILLING REPORT

Y.F. WONG
VALLENTINE & DUNNE
MALAYSIA.

001

647002

PREUSSAG AUSTRALIA PROPRIETARY LIMITED
RINGAROOMA JOINT VENTURE

NORTH-EAST TASMANIA
SCOUT DRILLING REPORT

C O N T E N T S.

002

PREUSSAG AUSTRALIA PROPRIETARY LIMITED

RINGAROOMA JOINT VENTURE

NORTH-EAST TASMANIA.

Introduction.

I am pleased to submit hereunder my report on the preliminary scout-drilling programme over the prospecting area held under EL 19/77 of 115 sq.km. and Exempt Area SR 32/70 of 15 sq. km. from 28th February to 5th April, 1979.

The purpose of this programme was to determine as quickly and economically as possible whether any area within the tenements warranted closer drilling that could yield sufficient yardage to support a dredging operation. Preliminary studies have indicated that a volume of 100 million cubic yards, to a depth of 150 ft, with a recovered grade of 0.30lb/cu. yd of 70% SnO_2 would represent a viable operation at an acceptable rate of return at present (late 1978) costs and tin prices.

Based on drill data made by previous investigation and general geological information, an area totalling some 20 sq. km. in the vicinity of the "Chimneys" was selected as the target area for initial investigations.

During the preliminary programme, it was fortunate that dry weather prevailed and thus afforded an opportunity to complete the proposed number of drill-holes spread over the area of interest. There were occasions when brief inclement weather created a minor mobilization problem for the rig; however, this problem was easily overcome with the help of a D4 bulldozer based at the drill sites. The bulldozer was used to clear access to drill sites, as well as to perform ancillary works. As is common in all prospecting operations, the first few days of operation were spent mostly in overcoming the problem of handling the heavy gravels during drilling.

A total of 23 drill-holes were sunk giving a combined depth of 470.48 metres, including that from five extension holes are shown in the schedule of bore results, drill logs and plan No. A4-267.

1. LOCATION AND ACCESS.

The prospect area is located to the north-west of Gladstone and covers mainly the drainage system formed by the Boobyalla and Ringarooma Rivers and their tributaries, with the northernmost section fringing the Tasman Sea. Access to the area can be gained from at least three good vehicular routes without difficulty. However, movement within the target area is restricted due to the presence of swamps and marshes.

2. TOPOGRAPHY.

The area is generally flat but undulating in some parts with most of the low-lying portions located north-west of the "Chimneys". The ground level over the target area is amenable to a dredging operation. However, it is well known that even highly irregular surfaces are no longer a problem in dredging since the ground can be dry-stripped by means of mechanical equipment.

3. BORE GRID SURVEY.

The positions of the proposed drill holes over the target area were located and fixed with the aid of a prismatic compass and existing aerial photographs and by reference to cultural features. Due to ground conditions, some of the drill holes had occasionally to be off-set to accommodate the rig. Drill holes at approximately 20 chain intervals were generally placed in rows spaced at some 40 chains apart and cutting across the main drainage system. No contour survey was carried out so that the collar level of each bore was made by estimation.

4. DRILLING METHOD.

The reverse circulation drilling using seven inch casing and 3-7/8 inch annular casing with a cutting shoe of external diameter varying between 7-1/6 inches and eight inches with water as the elevating medium was used throughout the programme.

Generally, good core recovery was obtained with this drill, although two problems were noticeably inherent, as are often experienced in most other methods of drilling. Firstly, because of the rig's sheer weight, mobilization was always time consuming, particularly in soggy ground, however, this problem was off-set by the relatively greater speed of drilling. Secondly, large boulders were a serious problem to the performance of the drill. The annular casing was sometimes blocked by these boulders that had been cut by the drill bit. For the purpose of bore hole evaluation, the external diameter of the drill bit was taken as the basis for volume calculation.

.../

5. DRILLING OPERATIONS.

5.1 Sampling.

Early attempts were made to sample the drill hole at every change of lithology as far as possible but, because of the difficulty by the drill operator to determine the changes during drilling, it was decided instead to sample at a constant three metre interval down to bedrock.

The samples from every section that came off the drill hole were delivered alternately to two steel sluices, built-in with a "boiler" box to receive the bulk of the solids. The slurry over-flowing the "boiler" box and containing very fine material then flowed past the launder and any fine solids were trapped by three sluice gates positioned along the length of the launder. The launder over-flow was finally discharged into a receptacle placed at the launder end where the fines were further trapped before discharging into the main sump where it was allowed to settle further. The settled solids from the "boiler" box and the launder were collected in large plastic containers and sent to the washing site for treatment. The solids from the main sump were collected and treated at the completion of the drill hole only.

5.2 Treatment of Ground Samples.

The samples were washed clean of slime with water from a small portable pump. The residues were then sieved at ¼ inch and 1/8 inch. The plus ¼ inch fraction was measured with a calibrated bucket to determine its volume, whilst the minus ¼ inch plus 1/8 inch fraction was examined for coarse cassiterite and other economic minerals. The minus 1/8 inch fraction was treated over a cradle to recover a rough concentrate which was then panned to yield a tin concentrate fraction and a heavy mineral fraction. The tin concentrate was weighed and assayed whilst the heavy mineral fraction was retained for further examination.

At every stage of the operation, particular attention was given to the shingle wash where most of the tin was associated.

.../

5.3 Testing of Bedrock.

Whilst every attempt was made to identify bedrock in the field, steps were also taken to sink the drill holes deeper into the bedrock to ensure that they were adequately "bottomed"; in other words, a true bottom was reached. When penetration into the hard bedrock became difficult, rock penetration was continued with a roller bit to ensure that a "false bottom" had not been intersected.

6. DRILLING RESULTS.

6.1 Nature of Alluvium.

The present drilling appears to indicate the alluvium in the target area is confined by the limits of the high ground to the east and to the west, flanking the Ringarooma valley with the "Chimneys" probably sub-outcropping as a country rock beneath wind-blown sand. This is evidenced by the shallower depths encountered in drill holes RDH 6, 10, 19 and 24, the complete absence of a tin-bearing gravel layer in RDH 6 and 24, and the increasing drill depths towards the centre of the alluvium. The deepest portion of the alluvium so far appears to be near the Ringarooma estuary as indicated by RDH 20 which is 24.30 metres deep.

The alluvium generally comprises a distinct overburden layer of sand, silt and clay or a combination of these containing very little or no tin at all and overlying typical shingle wash material before grading variously into mudstone, shale, dolerite, conglomerate and sandstone of probable Tertiary age or older. None of the clay samples examined contain tin but the clay from RDH 13 and holes north of it to as far as RDH 21 was observed to contain shells. The shingle wash consists of an assortment of very well-rounded quartz, slates, quartzite and granite pebbles, with quartz and slate as the dominant materials. Drill holes RDH 19 and 20, 21 and 22 in the Boobyalla Flat contain fragments of cemented sand ("hardpan") at the top in the upper units which proved difficult to drill.

6.2 Nature of the Bedrock.

The bedrock surface is generally flat to slightly irregular. That portion immediately below the heavy wash is weathered to a soft material; consequently, the alluvial bottom will not be a problem during cleaning up by dredging.

.../

Schedule of drill results

Drill Hole No.	Full Depth (m)	Alluvium depth (m)	Average Field Value (lb/yd^3)	Average Value lbs/cu.yd 72%Sn.	Bedrock
RDH 1	21.21	19.81	0.01	.01	Mudstone
RDH 2	22.70	21.50	0.01	.01	Sandstone
RDH 3	45.60	22.71	0.12	.11	"
RDH 4(RD25)	22.70	17.00	0.39	.39	"
RDH 5	11.51	9.00	0.01	.01	Dolerite
RDH 6	8.00	5.51	Nil	-	"
RDH 7	14.61	8.61	0.11	.11	Mudstone
RDH 8	18.61	15.71	0.08	.08	Conglomerate
RDH 9	Never Drilled				
RDH 10	15.21	12.00	0.12	.11	"
RDH 11	19.61	17.61	Trace	TR	"
RDH 12	21.81	18.50	0.05	.05	Shale
RDH 13	20.61	19.10	0.04	.04	Congl.dolerite
RDH 14	23.61	17.61	0.08	.07	Dol.conglomerate
RDH 15	21.81	16.60	Trace	TR	"
RDH 16	19.91	19.00	0.02	.02	"
RDH 17	22.21	20.10	0.10	.10	"
RDH 18	20.61	19.00	0.09	.09	"
RDH 19	20.61	16.00	0.01	.01	Conglomerate
RDH 20	26.61	24.30	0.02	.02	Mudstone
RDH 21	25.61	22.08	Trace	TR	"
RDH 22	19.61	19.00	Trace	TR	Congl.dolerite
RDH 23	17.61	13.61	Trace	TR	Dolerite
RDH 24	10.10	8.61	Trace	TR	Congl.dolerite
TOTALS	470.48	382.97			

6.3 Distribution, Nature and Recoverability of the Cassiterite.

Almost all the cassiterite is associated with the shingle wash. It appears also that there is a classification tendency of the cassiterite within this material in that the cassiterite is increasingly coarser with increasing depth. Although the wash occasionally contains excellent tin values, all the drill holes, except RDH 4 (Grade = 0.39 lb/yd^3), are uneconomic with field values varying between 0 and 0.12 lb/yd^3. The mitigating factors evidently are the thickness of the barren overburden layer which varies between 8.5 and 19 metres and the thinness of the tin-bearing wash which varies between 0.5 metre and 8.5 metres. Most of the relatively higher grade bores are located north-west of the "Chimneys"; it was in this area that additional bores were sunk in an attempt to prove potential dredging ground. Alluvium tested on the west bank of the Ringarooma River - from the Boobyalla Homestead to the Delta workings - contains extremely poor values.

The colour of the cassiterite varies from light to dark brown and occasionally red. Most of it is in the minus 60 plus 100 - mesh B.S. size range. This characteristic, together with the small quantity of associated deleterious minerals in the concentrate, would make the cassiterite amenable to recovery by conventional plant methods.

7. COMMENTS.

7.1 The exploration area is extensive and the depth of alluvium sufficient to support a dredging operation if economic values of detrital cassiterite could be located.

7.2 The ground level over the target area is essentially flat and, even without dry-stripping, would pose no problem to dredging operations.

7.3 The bedrock surface appears gently undulating and the material below the wash is reasonably soft. As such, the alluvial bottom could be satisfactorily cleaned up during dredging.

7.4 The area is easily accessible.

7.5 The shingle wash, in which the cassiterite is almost wholly concentrated, consists of free ground, making the cassiterite readily amenable to recovery in a conventional processing plant.

.../

7.6 The alluvium depth, averaging no more than 20 metres, is much shallower than what was expected.

7.7 Although no extensive deep leads have so far been intersected, it would appear that, even if these were present, it is unlikely that they would yield sufficient yardage for a dredging proposition.

8. EXPENDITURE

The attached expenditure statement for the period indicates an under expenditure due to limited depth of alluvium. The programme and budget allowed for 50 - 60 m. holes.

Budget	1979	125,000	125,000
Expenditure	1978	21,960	
Expenditure	1979	92,071	
		114,031	114,031

9. CONCLUSION.

On the basis of the present drill results, the area does not justify more intensive drilling in order to prove a viable dredging property.

009

647010

PREUSSAG AUSTRALIA PROPRIETARY LIMITED

EXPENDITURE STATEMENT FOR: TASMANIA

EXPLORATION LICENCES

NUMBER.... EL 19/77.....

PERIOD.. 1/6/79 to 30/6/79....

DIRECT EXPENDITURE	EXPENDITURE THIS PERIOD
Geological Surveys	41
Geophysical Surveys	
Geochemical Surveys	
Drilling	1194
Option & Licence Payments	1
Assays & Mill Tests	
Maps & Reproductions	19
Miscellaneous	
Sub-Total	1255
PAP Overheads 20%	251
TOTAL PROJECT EXPENDITURES THIS PERIOD:	1506
Previous period(s)	66490
TOTAL	$ 67996

COMMENTS:

010

647011

PREUSSAG AUSTRALIA PROPRIETARY LIMITED

EXPENDITURE STATEMENT FOR TASMANIA

EXPLORATION LICENCES

NUMBER Exempt Area SR/32/79

PERIOD 1/6/79 to 30/6/79

DIRECT EXPENDITURE	EXPENDITURE THIS PERIOD
Geological Surveys	41
Geophysical Surveys	
Geochemical Surveys	
Drilling	1195
Option & Licence Payments	-
Assays & Mill Tests	
Maps & Reproductions	19
Miscellaneous	
Sub-Total	1256
PAP Overheads 20%	252
TOTAL PROJECT EXPENDITURES THIS PERIOD:	1508
Previous period(s)	44527
TOTAL $	46035

COMMENTS:

APPENDIX.1.

NOTES ON GEOLOGY

012

647013

NOTES ON GEOLOGY.

Details on the nature of alluvium and bedrock are given in sections 6.1 and 6.2, as well as Appendices 2 and 4.

The purpose of this note is to integrate the above data into a geological and palaeogeographic interpretation to enhance understanding of the post-Tertiary geological history and distribution of tin and tin-bearing gravel in the Foster's Marsh area drilled by Preussag.

Three cross sections and two longitudinal sections were drawn through the lines of holes drilled. The sections should be regarded as schematic only since the position and collar elevation of the drill holes has not been surveyed. Approximate position retrieval was achieved by use of air photographs. Elevation estimates are related to the water level in Foster's Marsh.

The plotted data show a fairly regular, hard dredging bottom and a relatively even pre-Quaternary land surface. However, there is clear indication of a depression in the latter land surface between holes 5 and 7 (line 3). This feature is also reflected between holes 10 and 8 on line 2 and holes 19 and 3 on line 5. It is flanked by Jurassic dolerite to the north east, ?Tertiary conglomerates in the north and north west, possibly Permo-Triassic sediments to the south west and appears to be open to the south east. The basin appears to have been infilled by tin-bearing gravels to a depth of at least 12m (hole 3, line 3) but subsequent erosion appears to have removed the bulk of this material, leaving two scour channels separated by a ridge of tin-bearing wash.

A small, shallow pre-Quaternary depression is also indicated around holes 11 and 12.

Tin bearing gravels appear to have been deposited directly upon the pre-Quaternary land surface. A minor exception is the occurence of traces of tin in sand and fine gravels above the coarse wash in holes 7 and 10, which may reflect re-working and dilution of older wash at the edge of the basin.

A later period of marine incursion is indicated by a thin shell-bearing horizon between holes 13, 14, & 16 on line 4 and 15, 18 and 17 on line 5. At about the same horizon thicknesses of fine sand in holes 20 and 21 could be interpreted as a littoral facies of marine sand or, more probably, coastal dunes.

The only palaeostructure with a potential for development of significant thicknesses of tin-bearing gravels in the area drilled would appear to be the basin defined by holes 5,8,19 and 7. These gravels were subject to fluviatile erosion which could be expected to have reduced the volume potential of tin bearing wash. This consideration downgrades this basin as an exploration target for the large (± 100 mil. cu yds) volume of tin-bearing wash sought.

GERHARD KRUMMEI

C1913

Prepared J.H.H.

Drawn A.S.C

PREUSSAG AUSTRALIA PTY. LTD.

RINGAROOMA AREA - TAS. DRILL HOLE LOCATIONS
PALAEOGEOGRAPHIC INTERPRETATION

Date April 1979

A4-276

Littoral Sands ?

Marine Channel ?

Pre-Quaternary Basin ?

20 24·30 26·61 M, 0·02

21 22·08 25·61 M, Tr.

22 19·00 19·61 DC, Tr

14 17·61 23·61 DC, 0·08

16 19·00 19·91 DC, 0·02

17 20·10 22·21 DC, 0·10

18 19·00 20·61 DC, 0·09

13 19·10 20·61 DC, 0·04

15 16·60 21·81 DC, Tr

8 15·71 18·61 C, 0·08

6 5·51 8·00 D, Tr

9 not drilled

10 12·00 15·21 C, 0·12

5 9·00 11·51 S, 0·01

19 16·00 20·61 C, 0·01

4 17·00 22·70 S, 0·39

11 17·61 19·69 C, Tr.

3 22·71 45·60 S, 0·12

12 18·50 21·81 M, 0·05

2 21·50 22·71 S, 0·01

23 13·61 17·61 D, Tr

1 19·87 21·21 S, 0·01

7 8·61 14·61 M, 0·11

24 2·61 10·10 DC, Tr

Taylors Pasture

50'

S.R. 32/70

E.L. 19/77

20 — Drill hole and number.
10·60 — Alluvium depth (m)
11·90 — Total depth (m)
M, 0·01 — Av. field value (lb/yd³)
Bedrock: C - conglomerate.
D - dolerite.
DC - doleritic congl.
M - mudstone.
S - sandstone.

5 cm

CHAINS
0 40 80

641714

APPENDIX 2.

PETROLOGICAL DESCRIPTIONS

015

(2) KIN 149 · 647016

Pontifex & Associates Pty. Ltd.

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

(1)

GKr

23 APR 1979

MINERALOGICAL REPORT NO. 2582

19th April, 1979

TO:	Mr. G. Krummei, Preussag Australia Pty. Ltd., Farrer House, 4th Floor 24-28 Collins Street, MELBOURNE, Victoria 3000
YOUR REFERENCE:	Your letter dated 26/3/79 LRD/ah
MATERIAL:	Large drill core
IDENTIFICATION:	RDH 1 to 15 (exclusive of no. 9)
WORK REQUESTED:	Preparation of thin sections. Descriptions, with comments as specified
SAMPLES & SECTIONS:	Returned to you at above address

PONTIFEX & ASSOCIATES PTY. LTD.

COMMENTS

The initial requirements of this batch of samples was petrographic description, with specific comments on relative age, along the lines of my recent report No. 2568, and your letter of 14/3/79.

The thin sections were accordingly made, but before they were examined, instructions were received by phone, from John Hill (6/4/79) that basically all that was required was whether the samples were likely to be of Quaternary age; i.e. whether they represent 'basement' to the tin dreding prospect being investigated. Such 'basement' as previously outlined by G. Krummei may be -

Tertiary	:	basalt, gravel, sand
Permo/Trias	:	shale and sandstone
Siluro/Devonian	:	quartzite and slate
Jurassic	:	dolerite
Devonian	:	granite

The following report therefore gives a somewhat descriptive petrographic name to each sample, but without a petrographic description as such. A likely age is then assigned to each sample, according to comparisons of lithologies within the suite, also according to its petrographic characteristics, and within the scope of the time/rock units in the 'basement' initially provided.

The most common facies in the suite is a deeply weathered conglomerate and is worthy of a summary comment. This is represented by :-

RDH 8
RDH 10
RDH 11
RDH 13
RDH 14

The clasts in this facies are composed mainly of the same rock type comprising RDH5, which is a deeply weathered, completely argillised basalt (?Tertiary) or microdolerite (?Jurassic). Sample RDH6 appears closely related.

In RDH14 relict textures in the main clasts are better preserved than in most, and clearly represent a basalt. According to your time/rock units this would most likely be of Tertiary age, thus the conglomerate RDH14 may be considered to have formed post-Tertiary, i.e. Quaternary, or in the very late Tertiary.

To extend this interpretation of a basaltic composition of clasts to other samples listed above, is confused by the fact that in the conglomerate RDH15, the clasts are relatively fresh microdolerite (not basalt), which is probably Jurassic, and these are accompanied by quartzite of probable Silurian age. Thus this conglomerate may also be Tertiary or Quaternary, or indeed of Permian age.

The collective evidence indicates however that the conglomerate facies probably have essentially the same age.

Assuming a predominance of Tertiary basalt clasts, the oldest these conglomerates could be is late Tertiary particularly if the original basalt flows were early Tertiary. Their youngest possible age is obviously Quaternary.

Considering these deductions, together with the general 'lithification characteristics' seen in thin section in the matrix of these conglomerates, the conclusion is that the conglomerates RDH8, 10, 11, 13, 14 and 15 are probably late Tertiary in age; possibly, but seemingly less likely, they may be Quaternary.

- -

018

RDH 1 : black, weakly silty, highly carbonaceous mudstone, vaguely bedded and rather loosely consolidated, but showing very incipient shaly compaction.

Probably Tertiary.

RDH 2 : massive, pyritic, arkosic, lithic quartz sandstone, with a weakly carbonaceous pelitic matrix. Fragments include glassy lava, and matrix may be largely glass alteration products; iron sulphides are authigenic.

Probably Permo/Triassic
Possibly Tertiary

RDH 3 : massive, rather loosely consolidated, immature, arkosic, lithic and sideritic sandstone; incorporating minor clasts, and streaky layers and 'veins' of lignitic material. Accessory scattered iron sulphides, accessory ?glauconite.
Lithic fragments commonly volcanic.
Siderite is indigenous rather than later cement.

Probably Permo/Triassic
Possibly Tertiary

RDH 4 : massive, rather loosely consolidated, immature, arkosic, lithic and sideritic sandstone; essentially a more deeply weathered (argillised) equivalent of RDH 3, although without coarse carbonaceous material, and the siderite is more of an intergranular cement, and/or in small authigenic rosettes.
Accessory very fine iron sulphides scattered.

Probably Permo/Triassic
Possibly Tertiary

RDH 5 : completely argillised non-quartzose crystalline rock, almost certainly an original microdolerite. Minor rosettes of siderite and accessory very fine pyrite apparently authigenic weathering products.

A deep-weathered Jurassic, microdolerite or coarse crystalline Tertiary basalt.

RDH 6 : completely argillised non-quartzose rock, with relict textures indicative of an effusive, i.e. a glassy lava or possible basalt.

Probably deeply weathered Tertiary volcanic.

RDH 7 : massive, very fine-grained and very well-sorted arkosic and lithic, sandstone, probably tuffaceous with the very abundant lithic grains composed of volcanic ash and/or glass, but negligible quartz grains. Minor fine disseminated carbonaceous matter; very coarse vein-like segregations of marcasite and associated lignite.
Fine equivalent of RDH 3?

Probably Permo/Triassic
Possibly Tertiary

RDH 8 : conglomerate, with large subrounded clasts of completely argillised microdolerite (?jurassic), lesser smaller clasts of silty quartz sandstone (?Permian); with very coarse angular quartz and lesser felspar grains in matrix.

Probably Tertiary
Possibly Quaternary

RDH 10 : the same facies as RDH 8

Probably Tertiary
Possibly Quaternary

RDH 11 : The bulk of this rock is a completely argillised microdolerite or basalt ? breccia which compares with RDH5. Very small local areas of coarse angular quartz appear to be matrix as in conglomerates RDH 8 and RDH 10, thus the bulk is a clast. Thus the sample is equivalent to RDH 8 and RDH 10.

Probably Tertiary
Possibly Quaternary

RDH 12 : heterogeneous, poorly sorted unconsolidated 'sand' composed mainly of non-siliceous altered volcanic glass (palagonite) detritus; rare splinters of quartz and felspar, accessory ?glauconite; in a very fine (pelitic) matrix of equivalent gross composition. Very deeply weathered reworked vitric tuff of ? Tertiary age or Quaternary facies -- probably the latter.

RDH 13 : conglomerate facies essentially the same as RDH 8, 10, and 11 above. Clasts of argillised microdolerite and/or basalt (of probable Tertiary age), in a matrix of very coarse angular sand, accessory coarse micas and felspar, coarse authigenic siderite, and intergranular fine euhedral sulphate crystals.

Probably Tertiary
Possibly Quaternary

RDH 14 : Virtually the whole of the sample consists of a single clast of, completely argillised basalt (of Tertiary age), with clearly defined relict vesicles and hornblende plagioclase phenocrysts. This is very similar to the clasts in RDH 8, 10, 11 and 13, but in this sample it is clearly basalt rather than microdolerite. The matrix partly enclosing this clast is the same as in RDH 13, but without sulphate crystals.

Probably Tertiary
Possibly Quaternary

RDH 15 : conglomerate with very large subrounded clasts of relatively fresh microdolerite (? of Jurassic age) and of minor sericitic quartzite (? of Silurian age.) The rock matrix consists of very coarse, angular quartz grains, lesser felspar and a variety of metasedimentary and volcanic lithic fragments, and these occur in an oxidised clay cement.

Probably Tertiary
Possibly Quaternary

APPENDIX 3.

CONSULTANT'S COMMENTS.

647024

023 (1) GK → (2) RW 151

KEITH TURNER & ASSOCIATES
Mining Consultants

371 WARRIGAL ROAD,
BURWOOD. 3125.
AUSTRALIA.

Telephone:
288-2288.

5th April, 1979.

Mr. W. D. Dunne,
Mining Consultant,
c/- Ternas Charter Management,
F.D.N. Building,
P.O. Box 936,
KUALA LUMPUR. 01-02
Malaysia.

Dear Bill,

Boobyalla Programme

My apologies are recorded for not writing you earlier on the above matter. However, the situation has been somewhat complex in the field, with the problem of drilling below the 20 metre horizon, as the programme advances to the north.

I had hoped for a break through at depth into wash, and values between the 100-150' horizons.

As planned I visited the field with Gerhard on 9th March, and since then have been in touch from time to time with him and with John Schuman of Sides.

In the attached notes, observations are recorded on the various aspects as well as decisions made by Pressang at a meeting with Mr. Hill and Gerhard on 30th March at 24 Collins Street.

024

It is possible you may have returned to U.K. before this letter arrives in Kuala Lumpur - a copy will also be posted to your Surrey address.

I trust you have had an interesting stay in Malaysia and that you return home safe and well.

We send best wishes to you both.

Sincerely,

Keith Turner.

Attch.

025

KEITH TURNER & ASSOCIATES
Mining Consultants

371 WARRIGAL ROAD,
BURWOOD, 3125.
AUSTRALIA.

Telephone:
288-2288.

ATTACHMENT A

Notes on a Visit to Boobyalla on 9th March, 1979.

1. The visit was made in company with Gerhard Krimmi - leaving Melbourne p.m. on Thursday, 8th March, returning on the late plane on Friday, 9th March.

Gerhard proceeded by car to Burnie on another assignment and the writer travelled to Melbourne in the company of Roger Stump, a senior supervisor of Sides drilling force.

2. In the field, Hole No. 13 had been collared shortly before our arrival, and was being drilled at a rate of around 20' per hour in overburden.

Typical wash was reached during the visit, evidenced by the slight reaction on the casing and the steady rattle of stone moving up the inner casing.

Both fines and wash stones were obscured to some extent by usage of hydropol mud - which had been proved in previous holes to be an effective seal against losses outside the outer casing.

Sides had made an improvement to the shoe by altering slightly the set of the teeth, arranged in the cutting edge. Some of the larger size shingle were obviously broken down and a relatively steady flow of screened feed was noted - moving down the trays. Minor delays in drilling occurred due to build up of feed in the trays which certainly would not happen with the usage of the larger trays being made to overcome this problem.

The rig, with hydraulic motors for rotation and movement of casing, gave excellent performance.

3. Recovery of Heavy Minerals

The closed circuit arrangement with the feed water plus mud in suspension, was considered to provide good control of the recovery of heavy minerals. The trays being run down quietly with the tails retained in a suitable container and thus available for check sampling.

Final cleanup of the low grade tray concentrate via cradle and panning gave an excellent tin concentrate typical of the region.

4. Hole 13 in wash at the time of the visit, struck heavy boulders (as described by the drillers) and assumed to be basement. Understood two further holes were drilled, but these also encountered rock, and, the objective of reaching 150' was ruled out.

5. General

Heavy rains caused rises in the river about this time, and operations were held up for a short period. The water table throughout that section being almost at grass roots.

5th April, 1979.

KEITH TURNER & ASSOCIATES
Mining Consultants

371 WARRIGAL ROAD,
BURWOOD, 3125
AUSTRALIA.

Telephone:
288-2288.

ATTACHMENT B

Further Notes dealing with Holes 14 & 15

On 23/3/79 John Schuman advised that Hole 14 at 21 metres struck granite (or similar extremely hard rock.) Moving to Hole 15, a similar situation existed.

On 26/3/79 Gerhard advised that Hole 15 at 20 metres hit indurated conglomerate carrying pyrite. The standard shoe although faced with hard surfacing electrodes could make no progress.

Sides brought in a rotary bit, which suffered heavy wear with limited footage per hour.

The conglomerate carried fragments of dolerite and was considered to be positive basement - albeit, having some relationship with tectonics.

A study was being made of the footage rates and costs required to continue drilling in this series and the impact on budgeted funds.

On 30/3/79 the writer attended at 24 Collins Street to discuss with Messrs Hill and Krumbi, all the factors related to the Boobyalla programme.

It was considered that the possibilities of limited wash and values on the horizon of around 20-25 metres would fail to establish the volume and grade necessary for the large scale operation originally planned.

Comparisons of grade from Pressing holes with Dorset results showed similar figures. (Dorset inferred .13 lbs./yd. in an estimated 60 million yards.)

Portifex and Associates of Adelaide, highly experienced petrologists, reported macroscopically on the various specimens and in general terms supported the principle that basement comprised various series ranging through the periods Jurassic to Silurian.

Although the possibility of gutters or runs was discussed and could exist in the areas between the grid, volumes would necessarily be much reduced, while it seemed that the conglomerate extending to the north and west was sufficiently tight to resist weathering.

The holes drilled to 150' showed at that depth no evidence of alluvials below the heavy wash horizons around 60 - 70'

Decision had been reached to move the rig out of the Foster's Marsh area to the Little Boobyalla section.

The writer suggested that a hole be drilled near the McGregor, where Dorset Dredge indicated a potential lead existed, striking north west. Dorset recorded a width of perhaps 4-5 chains which was picked up when moving in that direction from the construction paddock.

Dorset dredged to maximum depth around 50' below water line (which was near river level) and carried a face above water line of up to 30' for a limited time, being forced to turn to port when stacking of tails became a problem.

It is understood that this lead was not bottomed. The grade recovered was notably higher than the rest of the property. However, the question of available yardage in such a situation was not encouraging even if it should extend for several miles into Foster's Marsh. (The writer is indebted to Jon Volker for this information - he was in charge of operations at the time.)

The decision by Pressing was to complete three holes. Planning provides for completion of the programme before Good Friday, 13th April, 1979.

5th April, 1979.

APPENDIX 4.

DRILL LOGS.

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 27-2-79 10.30 a.m.
Date & time drilling completed : 27-2-79 5.15 p.m.

Borehole number :
Borehole reference : RDH 1
Position of borehole : On Prog
Collar level : 130 (?)
Cutting shoe ϕ : 7 1/4"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Grayish clay; Silty	S	-		Problem with clay and
2	5.31	17.4	-"-	S	-		heavy gravels.
3	8.21	26.9	-"-	S	-		New bits tried on new
4	11.11	36.5'	Fine sand; clayey	F	-		hole.
5	14.01	46.0	Dark grey clay; peaty	S	-		
6	16.91	55.5'	-"-	S	-		
7	19.81	65.2	Sand with heavy gravels, some peat and clay lens (wash)	M	4.0	-8S+100	
8	21.21	69.6	Bedrock - Mudstone, carbonaceous lignitic, pyritic				

a. Alluvium thickness (ft) : 65.2
b. Theoretical pipe volume to tin-bearing depth (ft³) : 18.71
c. Percentage of +1/4" fraction : 2.7
d. Combined concentrate est'd. weight (gm) : 4.0
e. Combined concentrate corr. weight (gm) : 3.7
f. Average field value (lb/ft³) : 0.01
g. Tin assay. : 67.1 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.01

PREUSSAG AUSTRALIA PTY. LTD.

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 28-2-79 11.30 a.m.
Date & time drilling completed : 1-3-79 2.30 p.m.

Borehole number :
Borehole reference : RDH 2
Position of borehole : On peg
Collar level : +25'
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Greyish sandy clay; fine gravels	M	-		Problem with handling heavy
2	5.31	17.4	Medium sand, fine gravels, peat	F	-		gravels. Built up bit —
3	8.21	26.9	-"-	F	-		working better. Clay no
4	11.11	36.5	-"-	F	-		longer a problem.
5	14.01	46.0	Dark grey clay; peaty	S	-		
6	16.91	55.5'	-"-	S	-		
7	19.81	65.2	-"-	S	-		
8	20.81	68.3	Coarse sand, gravelly with clay lens (wash)	M	0.2	-10+150	
9	21.50	70.5	-"-	M	3.7	-44+60	
10	22.70	74.5	Bedrock - Sandstone, arkosic lithic				

a. Alluvium thickness (ft) : 70.5
b. Theoretical pipe volume to tin-bearing depth (ft³) : 20.23
c. Percentage of +¼" fraction : 0.8
d. Combined concentrate est'd. weight (gm) : 3.9
e. Combined concentrate corr. weight (gm) : 3.6
f. Average field value (lb/ft³) : 0.01
g. Tin assay. : 72.5 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.01

PREUSSAG AUSTRALIA PTY. LTD.

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 2-3-79 11:00 a.m.
Date & time drilling completed : 5-3-79 5:30 p.m.

Borehole number :
Borehole reference : RDH 3
Position of borehole : On peg
Collar level : +25'
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (ASBS)	Remarks.
1	2.61	8.6	Greyish silty mud	F			
2	5.31	17.4	Greyish silty sandy some fine gravels	F			Ins from fierce to drill to
3	8.21	26.9	— " —	F			150 ft. to test basement.
4	11.11	36.5	Dark clay; peaty	S			
5	14.01	46.0	— " — with sand and gravels (wash)	S	13.3	-85+100	
6	16.91	55.5	Gravelly sand; clay lens and peat	M	23.6	-60+85	
7	19.81	65.2	— " —	M	6.0	-44+60	
8	22.71	74.5	— " —	M	1.4	-22+44	
9	45.60	149.6	Bedrock - Sandstone, arkosic lithic with pyrite.				

a. Alluvium thickness (ft) : 74.5
b. Theoretical pipe volume to tin-bearing depth (ft³) : 21.38
c. Percentage of +¼" fraction : 3.5
d. Combined concentrate est'd. weight (gm) : 44.3
e. Combined concentrate corr. weight (gm) : 40.6
f. Average field value (lb/ft³) : 0.12
g. Tin assay. : 70.4 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.11

PREUSSAG AUSTRALIA PTY. LTD.

64/03/23

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 6-3-79 8.00 a.m.
Date & time drilling completed : 6-3-79 3.00 p.m.

Borehole number :
Borehole reference : RDH 4 (RDH 25.)
Position of borehole : On peg
Collar level : +5'
Cutting shoe ϕ : 7¼".

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (mesh)	Remarks.
1	2.61	8.6	Brownish sandy clay	M	"		
2	4.97	16.3	Dark grey clay; peaty	S	"		
3	7.87	25.8	" "	S	"		
4	10.77	35.3	" "	S	"		
5	13.67	44.8	" "	S	"		
6	16.57	54.4	Dark grey clay, sandy; gravelly (wash)	M	4.3	-100+150	
7	17.00	55.8	Coarse sand, heavy gravels with soft clay lens	M	100.8	-60+100	
8	22.70	74.50	Bedrock - Sandstone, carbonaceous				

a. Alluvium thickness (ft) : 55.8
b. Theoretical pipe volume to tin-bearing depth (ft³) : 16.1
c. Percentage of +¼" fraction : 1.5
d. Combined concentrate est'd. weight (gm) : 105.1
e. Combined concentrate corr. weight (gm) : 104.1
f. Average field value (lb/ft³) : 0.39
g. Tin assay. : 73.3 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.39

PREUSSAG AUSTRALIA PTY. LTD.

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 6/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 7-3-79 1.15 p.m.
Date & time drilling completed : 7-3-79 3.45 p.m.

Borehole number :
Borehole reference : RDH 5
Position of borehole : Ck p=g
Collar level : +5'
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (MBS)	Remarks.
1	2.61	8.6	Brownish silty sand with some gravels	F	-		
2	5.61	18.4	Dark grey clay; sandy, peaty	S	-		
3	8.61	28.2	Dark grey clay; peaty	S	-		
4	9.00	29.5	Sandy gravels with soft grey clay	M	1.4	-8S+100	
5	11.51	37.8	Bedrock - Dolerite, greenish with pyrite				

a. Alluvium thickness (ft) : 29.5
b. Theoretical pipe volume to tin-bearing depth (ft³) : 8.47
c. Percentage of +¼" fraction : 1.3
d. Combined concentrate est'd. weight (gm) : 1.4
e. Combined concentrate corr. weight (gm) : 1.3
f. Average field value (lb/ft³) : 0.01
g. Tin assay. : 70.9 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.01

PREUSSAG AUSTRALIA PTY. LTD.

035

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 8-3-79 10.00 a.m.
Date & time drilling completed : 8-3-79 11.00 a.m.

Borehole number :
Borehole reference : RDH 6
Position of borehole : On peg
Collar level : + 15'
Cutting shoe ϕ : 7 1/4"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (MBS)	Remarks.
1	2.61	8.4	Brownish silty sand	F	-		
2	5.61	18.1	Greenish clay, some gravels and sand	M	-		
3	8.00	26.2	Bedrock - Dolerite, Greenish				

a. Alluvium thickness (ft) : 15/18
b. Theoretical pipe volume to tin-bearing depth (ft³) : -
c. Percentage of +1/4" fraction : 1.0
d. Combined concentrate est'd. weight (gm) : -
e. Combined concentrate corr. weight (gm) : -
f. Average field value (lb/ft³) : -
g. Tin assay. : -
h. Average value (corr. to 72% Sn) (lb/ft³) : -

PREUSSAG AUSTRALIA PTY. LTD.

93/19

036

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 10/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 8-3-79 3.30 p.m.
Date & time drilling completed : 8-3-79 6.00 p.m.

Borehole number :
Borehole reference : RDH 7
Position of borehole : On p.g.
Collar level : +25'
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.6	8.6	Greyish sandy clay	S	Trace		
2	5.6	18.4	— " — with fine gravels and peat	M	4.5	-6 +100	
3	7.6	25.0	Gravelly sand (WASH)	F	5.8	-14 +85	Coarse cassiterite at
4	8.6	28.2	— " — with soft clay lens	F	4.6	-8 +22	base of alluvium.
5	14.6	47.9	Bedrock - Mudstone, carbonaceous, slickensided				

a. Alluvium thickness (ft) : 28.2
b. Theoretical pipe volume to tin-bearing depth (ft³) : 8.09
c. Percentage of +¼" fraction : 3.8
d. Combined concentrate est'd. weight (gm) : 14.9
e. Combined concentrate corr. weight (gm) : 14.7
f. Average field value (lb/ft³) : 0.11
g. Tin assay. : 71.0 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.11

PREUSSAG AUSTRALIA PTY. LTD.

64963

037

9/4/1

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 12-3-79 12.00 noon
Date & time drilling completed : 12-3-79 6.30 p.m.

Borehole number :
Borehole reference : RDH 8
Position of borehole : Offset a 3m N. to S.10
Collar level : Swamp level
Cutting shoe ϕ : 7 1/4"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Brownish sandy clay	S	Trace		Hole first stopped at 12 metres
2	5.61	18.4	Pale grey clay	S	Trace		No seal. Rock/reef.
3	8.61	28.2	Dark grey clay; sandy	S	Trace		
4	11.61	38.1	Coarse sand with soft clay and fine gravels, peaty	F	0.3	-60+100	
5	14.61	47.9	Coarse sand, peaty with heavy gravels (wash)	F	12.3	-60+100	
6	15.71	51.5	— " —	F	7.6	-60+100	
7	18.61	61.1	Bedrock - Conglomerate, greywacke clay matrix.				

a. Alluvium thickness (ft) : 51.5
b. Theoretical pipe volume to tin-bearing depth (ft³) : 14.30
c. Percentage of +1/4" fraction : 7.8
d. Combined concentrate est'd. weight (gm) : 20.4
e. Combined concentrate corr. weight (gm) : 20.6
f. Average field value (lb/ft³) : 0.08
g. Tin assay. : 69.1 %
h. Average value (corr. to 72% Sn) (lb/ft³) : 0.08

PREUSSAG AUSTRALIA PTY. LTD.

6479

9/4/1

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 15-3-79 5.00 p.m.
Date & time drilling completed : 15-3-79 6.30 p.m.

Borehole number :
√Borehole reference : RDH 10
Position of borehole : Ck peg
Collar level : Swamp level
Cutting shoe ϕ : 7¼".

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (tBS)	Remarks.
1	2.61	8.6	Brownish sandy clay	S	1.7	-8S+100	RDH 9 - abortive, shifted
2	5.61	18.4	- " - with fine gravels	M	3.6	-8S+100	to this hole. Mistreated.
3	8.61	28.2	Dark grey sandy clay; gravelly and peaty	M	4.6	-8S+100	
4	11.61	38.1	Sandy gravels with soft grey clay; peaty (wash)	F	1.3	-8S+100	
5	12.00	39.4	Sandy gravels, peaty.	F	12.2	-44+6	
6	15.21	49.9	Bedrock - Conglomerate, greenish with clay matrix				

a. Alluvium thickness (ft) : 39.4
b. Theoretical pipe volume to tin-bearing depth (ft³) : 11.31
c. Percentage of +¼" fraction: : 80
d. Combined concentrate est'd. weight (gm) : 23.4
e. Combined concentrate corr. weight (gm) : 22.6
f. Average field value (lb/ft³) : 0.12
g. Tin assay. : 70.7 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .11

PREUSSAG AUSTRALIA PTY. LTD.

6479

039

2/4/1

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 17-3-79 10.45 a.m.
Date & time drilling completed : 17-3-79 12.00 noon

Borehole number :
Borehole reference : RDH 11
Position of borehole : On log
Collar level : Swamp Road
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (MBS)	Remarks.
1	2.61	8.6	Brownish sandy clay; little gravel	S	Trace		On 16/3/79 - Great flood
2	5.61	18.4	Greyish sandy clay	S	-		Caused by overflow of Ringarooma
3	8.61	28.2	Coarse gravelly sand; peaty	F	-		Mobilization after noon.
4	11.61	38.1	Dark grey clay; peaty	S	-		
5	14.61	47.9	Sandy gravels with grey clay, peaty (wash)	M	0.3	-8S+100	
6	17.61	57.8	— " —	M	1.0	-8S+100	
7	19.61	64.3	Bedrock - Conglomeratic greywacke				

a. Alluvium thickness (ft) : 57.8
b. Theoretical pipe volume to tin-bearing depth (ft³) : 16.59
c. Percentage of +¼" fraction : 3.0
d. Combined concentrate est'd. weight (gm) : 1.3
e. Combined concentrate corr. weight (gm) : 1.5
f. Average field value (lb/ft³) : Trace
g. Tin assay. : 60.2 %
h. Average value (corr. to 72% Sn) (lb/ft³) : Trace.

PREUSSAG AUSTRALIA PTY. LTD.

64/7040

040

D/4/1

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 19-3-79 8.45 a.m.
Date & time drilling completed : 19-3-79 11.30 a.m.

Borehole number :
Borehole reference : RDH 12
Position of borehole : On peg
Collar level : Swamp level
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Brownish silty clay, some coarse sand	S	Trace		
2	5.61	18.4	Grey silt clay, with coarse sand	S	Trace		
3	8.61	28.2	Coarse gravelly sand, peaty	F	Trace		
4	11.61	38.1	Dark grey clay, peaty	S	–		
5	14.61	47.9	Coarse sand, clayey with gravels	F	0.1	-100+150	
6	17.61	57.8	Sand with heavy gravels, peaty (WASH)	F	12.3	-85+100	
7	18.50	60.7	— " —	F	1.4	-85+100	
8	21.81	71.6	Bedrock - Shale, silty and carbonaceous, silicified				

a. Alluvium thickness (ft) : 60.7
b. Theoretical pipe volume to tin-bearing depth (ft³) : 17.42
c. Percentage of +¼" fraction : 4.2
d. Combined concentrate est'd. weight (gm) : 13.8
e. Combined concentrate corr. weight (gm) : 13.9
f. Average field value (lb/ft³) : 0.05
g. Tin assay. : 72.1 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .05

PREUSSAG AUSTRALIA PTY. LTD.

64744

041

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 19-3-79 4.00 p.m.
Date & time drilling completed : 20-3-79 6.00 p.m.

Borehole number :
Borehole reference : RDH 13
Position of borehole : On peg
Collar level : Swamp level
Cutting shoe ϕ : 7½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Brownish silty clay	S	Trace		
2	5.00	16.4	— " — with some gravels and peat	F	Trace		
3	5.61	18.4	Dark grey clay; peaty	S	-		
4	8.61	28.2	— " — with shells	S	Trace		
5	11.61	38.1	Dark grey clay with some gravels	S	0.3	-100+150	Two gold colours observed
6	14.61	47.9	— " —	S	3.4	-85+100	in to wash.
7	15.61	51.2	Coarse gravelly sand; peaty (WSW)	F	2.5	-85+100	
8	17.61	57.8	Sand with heavy gravels (wash)	F	4.5	-85+100	
9	19.10	62.7	— " —	F	3.2	-85+100	
10	20.61	67.4	Bedrock - Congl. dolerite.				

a. Alluvium thickness (ft) : 62.7
b. Theoretical pipe volume to tin-bearing depth (ft³) : 1925
c. Percentage of +¼" fraction : 2.5
d. Combined concentrate est'd. weight (gm) : 13.9
e. Combined concentrate corr. weight (gm) : 13.3
f. Average field value (lb/ft³) : 0.04
g. Tin assay. : 65% Sn
h. Average value (corr. to 72% Sn) (lb/ft³) : .04

PREUSSAG AUSTRALIA PTY. LTD.

6476

D/4/1

042

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 1617 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 20-3-79 3.30 p.m.
Date & time drilling completed : 21-3-79 2.30 p.m.

Borehole number :
Borehole reference : RDH 14
Position of borehole : Side peg
Collar level : Swamp level
Cutting shoe ϕ : 7½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (MBS)	Remarks.
1	2.61	8.6	Brownish sandy clay, with gravels	M	-		
2	5.61	18.4	Greyish sandy clay; peaty	M	-		
3	8.61	28.2	Coarse sand; some clay	F	-		
4	11.61	38.1	Dark grey clay with shells peaty	S	-		
5	14.61	47.9	Sand with heavy gravels, peaty	F	0.4	-85+100	
6	17.61	57.8	(WASH) - " -	F	24.4	-60+85	Two fine gold colours
7	23.61	77.5	Bedrock - Dol. Conglomerate pyritic.				

a. Alluvium thickness (ft) : 57.8
b. Theoretical pipe volume to tin-bearing depth (ft³) : 17.74
c. Percentage of +¼" fraction : 11.2
d. Combined concentrate est'd. weight (gm) : 24.8
e. Combined concentrate corr. weight (gm) : 24.7
f. Average field value (lb/ft³) : 0.08
g. Tin assay. : 62.8 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .09

PREUSSAG AUSTRALIA PTY. LTD.

94673

043

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 22-3-79 12.15 p.m
Date & time drilling completed : 24-3-79 5.15 p.m.

Borehole number :
Borehole reference : RDH 15
Position of borehole : Dam prop
Collar level : Swamp level
Cutting shoe ϕ : 7½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Brownish Sandy clay	S	-		
2	5.61	18.4	Pale grey clay	S	-		
3	8.61	28.2	Fine sand; clayey	F	-		
4	11.61	38.1	Dark grey soft clay with shells; peaty	M	-		
5	14.61	47.9	Dark grey soft clay; peaty	M	-		
6	16.60	54.5	Sand with gravels and dark clay; peaty (wash)	F	0.6	-85+100	Roller bit used to
7	21.81	71.6	Bedrock - Dol. Conglomerate				breach bedrock. Without success.

a. Alluvium thickness (ft) : 54.5
b. Theoretical pipe volume to tin-bearing depth (ft³) : 16.73
c. Percentage of +¼" fraction : 0.6
d. Combined concentrate est'd. weight (gm) : 0.6
e. Combined concentrate corr. weight (gm) :
f. Average field value (lb/ft³) : Trace
g. Tin assay. : —
h. Average value (corr. to 72% Sn) (lb/ft³) : Trace

PREUSSAG AUSTRALIA PTY. LTD.

64704

044

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 26-3-79 10.30 a.m.
Date & time drilling completed : 27-3-79 11.15 a.m.

Borehole number :
Borehole reference : RDN 16
Position of borehole : On peg
Collar level : Swamp level
Cutting shoe ϕ : 7¼"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Greyish sandy clay	S	-		
2	5.61	18.4	Fine sand	F	-		
3	8.61	28.1	— 4 —	F	Trace		
4	11.61	38.1	Dark grey clay with shells, peaty	S	-		
5	15.00	47.9	Pale brown sandy silt	S	-		
6	17.61	57.8	Sand with heavy gravels (wash)	F	3.1	-85+100	
7	19.00	62.3	— 4 —	F	4.6	-60+85	
8	19.91	65.3	Bedrock - Dol. conglomerate.				

a. Alluvium thickness (ft) : 62.3
b. Theoretical pipe volume to tin-bearing depth (ft³) : 19.13
c. Percentage of +¼" fraction : 10.5
d. Combined concentrate est'd. weight (gm) : 7.7
e. Combined concentrate corr. weight (gm) : 7.7
f. Average field value (lb/ft³) : 0.02
g. Tin assay. : 65.5 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .02

PREUSSAG AUSTRALIA PTY. LTD.

6479

C45

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Rinyirrina
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 28-3-79 9.45 a.m.
Date & time drilling completed : 28-3-79 1.30 p.m.

Borehole number :
Borehole reference : RDH 17
Position of borehole : On peg
Collar level : Swamp level
Cutting shoe ϕ : 7½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Greyish silty clay	S	-		
2	5.61	18.4	Grey clay, soft	M	-		
3	8.61	28.2	Fine sand	F	TRACE		
4	11.61	38.1	Dark grey clay with shells	S	-		
5	14.61	47.9	Dark grey clay with sand & gravels	M	2.1	-85+100	
6	17.61	57.8	Heavy gravels mixed with pasty sand and clay (as cash)	F	28.1	-85+100	
7	20.10	65.9	- 4 -	F	4.3	-60+85	
8	22.21	72.9	Bedrock - Dsl. Conglomerate				

a. Alluvium thickness (ft) : 65.9
b. Theoretical pipe volume to tin-bearing depth (ft³) : 20.23
c. Percentage of +¼" fraction : 12.3
d. Combined concentrate est'd. weight (gm) : 34.6
e. Combined concentrate corr. weight (gm) : 34.4
f. Average field value (lb/ft³) : 0.10
g. Tin assay. : 67.6 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .10

PREUSSAG AUSTRALIA PTY. LTD.

9 Feb 79

046

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 19/77 - Ringbarrow
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 27-3-79 8.00 a.m.
Date & time drilling completed : 29-3-79 2.30 pm

Borehole number :
Borehole reference : RDH 18
Position of borehole : Offset 0.100 m. to N.E.
Collar level : Swamp level
Cutting shoe ϕ : 7½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Greyish sandy clay	S	-		
2	5.61	18.4	— " —	S	-		
3	7.00 8.61	23.6	Fine sand	F	TRACE		
4	14.61	47.9	Dark grey clay with shells, peaty	S	-		
5	17.61	57.8	Heavy gravels with sand and clay (wash)	F	4.6	-85+100	
6	19.00	62.3	— " —	F	25.8	-60+85	
7	20.61	67.6	Bedrock - Dol. conglomerate				

a. Alluvium thickness (ft) : 62.3
b. Theoretical pipe volume to tin-bearing depth (ft³) : 19.13
c. Percentage of +¼" fraction : 6.5
d. Combined concentrate est'd. weight (gm) : 30.4
e. Combined concentrate corr. weight (gm) : 30.9
f. Average field value (lb/ft³) : 0.07
g. Tin assay. : 64.7 o/o
h. Average value (corr. to 72% Sn) (lb/ft³) : .09

PREUSSAG AUSTRALIA PTY. LTD.

9479

5/4/1

ALLUVIAL DRILL HOLE LOG SHEET

047

Tenement number & name : BL 19/77 - Lingarona
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 30-3-79 10.30 a.m.
Date & time drilling completed : 30-3-79 1.30 p.m.

Borehole number :
Borehole reference : 12DH 19
Position of borehole : 7ba' On peg
Collar level : +20'
Cutting shoe ϕ : 7½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (MBS)	Remarks.
1	2.6	8.6	Greyish clayey sand with "hardpan" and fine gravels	M	Trace		
2	5.6	18.4	— " —	F	-		
3	8.6	28.2	— " —; peaty	M	Trace		
4	11.6	35.1	Dark grey clay; peaty	S	-		
5	14.6	47.9	— " — with sand + heavy gravel	M	-		
6	16.00	52.5	Sand and heavy gravels (wash)	F	3.1	-44+60	
7	20.6	67.6	Bedrock - Conglomerate				

a. Alluvium thickness (ft) : 52.5
b. Theoretical pipe volume to tin-bearing depth (ft³) : 16.12
c. Percentage of +¼" fraction : 15.1
d. Combined concentrate est'd. weight (gm) : 3.1
e. Combined concentrate corr. weight (gm) : 3.1
f. Average field value (lb/ft³) : 0.01
g. Tin assay. : 72 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .01

PREUSSAG AUSTRALIA PTY. LTD.

6417-8

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : RL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 31-3-79 9.30 a.m.
Date & time drilling completed : 31-3-79 2.30 p.m.

Borehole number :
Borehole reference : RDH 20
Position of borehole : On peg
Collar level : +20
Cutting shoe ϕ : 8½"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (MBS)	Remarks.
1	2.61	8.6	Greyish fine sand with "kinkpan" and fine gravels	M	Trace		
2	5.61	18.4	Coarse gravelly sand; peaty	F	Trace		
3	8.61	28.2	Coarse sand; peaty	F	Trace		
4	11.61	38.1	Fine sand	F	-		
5	14.61	47.9	— " —	F	-		
6	16.00	52.5	— " —	F	-		
7	18.61	61.1	Dark grey clay	S	-		
8	21.61	70.9	Sand and heavy gravels with clay lens	M	1.8	-8S+100	
9	22.61	74.2	Greenish cemented sand	S	-		
10	23.61	77.5	Sandy Gravels (wash)	F	0.6	-8S+100	
11	24.30	79.7	— " —	F	6.0	-60+8S	
12	26.61	87.3	Bedrock - Mudstone, carbonaceous				

a. Alluvium thickness (ft) : 79.87
b. Theoretical pipe volume to tin-bearing depth (ft³) : 27.82
c. Percentage of +¼" fraction : 3.0
d. Combined concentrate est'd. weight (gm) : 8.4
e. Combined concentrate corr. weight (gm) : 4.5
f. Average field value (lb/ft³) : 0.02
g. Tin assay. : 66.3 %
h. Average value (corr. to 72% Sn) (lb/ft³) : .02

PREUSSAG AUSTRALIA PTY. LTD.

6479

049

9/4/1

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 10/77 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 2-4-77 12.30 pm.
Date & time drilling completed : 3-4-77 3.30 pm.

Borehole number :
Borehole reference : RDH 21
Position of borehole : On peg
Collar level : +30'
Cutting shoe ϕ : 8"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F,M,S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (mBS)	Remarks.
1	2.6	8.6	Brownish fine sand with "hardpan"	M	0.10	-8 S f100	
2	5.6	18.4	Coarse with fine gravels	F	Trace		
3	8.6	28.2	Greyish fine sand	F	-		
4	11.6	38.1	— " —	F	-		
5	14.6	47.9	— " —	F	-		
6	17.6	57.8	Grey clay; peaty	S	-		
7	20.6	67.6	— " —	S	0.10	- 8 S f100	
8	22.08	72.4	Heavy gravels with clay.	M	0.90	- 8 S f100	
9	25.6	84.0	Bedrock - Mudstone, lignitic				

a. Alluvium thickness (ft) : 72.4
b. Theoretical pipe volume to tin-bearing depth (ft³) : 22.23
c. Percentage of +¼" fraction : 1.8
d. Combined concentrate est'd. weight (gm) : 1.0
e. Combined concentrate corr. weight (gm) :
f. Average field value (lb/ft³) : Trace
g. Tin assay. : -
h. Average value (corr. to 72% Sn) (lb/ft³) : Trace

PREUSSAG AUSTRALIA PTY. LTD.

9/4/1

ALLUVIAL DRILL HOLE LOG SHEET

050

Tenement number & name : EL 19/77 - Ringarooma
Prospect number & name :
Location of area : N.E Tasmania
Date & time drilling commenced : 4-4-79 8.30 a.m.
Date & time drilling completed : 4-4-79 10.30 a.m.

Borehole number :
Borehole reference : RDH 22
Position of borehole : On peg
Collar level : -115'
Cutting shoe ϕ : 8"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1.	2.61	8.6	Fine sand with fine gravels	F	-		
2	5.61	18.4	— " —	F	-		
3	8.61	28.2	— " —	F	-		
4	11.61	38.1	— " —	F	-		
5	14.61	47.9	Fine sand	F	-		
6	17.61	57.8	Coarse sand	F	Trace		
7	19.00	62.3	Sandy gravels	F	0.5	-60 +8S	
8	19.61	64.3	Bedrock - Congl. obviously				

a. Alluvium thickness (ft) : 62.3
b. Theoretical pipe volume to tin-bearing depth (ft³) : 19.3
c. Percentage of +1/4" fraction : 0.6
d. Combined concentrate est'd. weight (gm) : 0.5
e. Combined concentrate corr. weight (gm) : -
f. Average field value (lb/ft³) : Trace
g. Tin assay. : -
h. Average value (corr. to 72% Sn) (lb/ft³) : Trace

PREUSSAG AUSTRALIA PTY. LTD.

6747

C51

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : EL 1077 - Ringarooma
Prospect number & name :
Location of area : N.E. Tasmania
Date & time drilling commenced : 4-4-79 3.00 p.m.
Date & time drilling completed : 4-4-79 4.00 p.m.

Borehole number :
Borehole reference : RDH 23
Position of borehole : On Peg
Collar level : Swamp level
Cutting shoe ϕ : 8"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.6	8.6	Pale grey sandy silt	F	-		
2	5.6	18.4	Grey clay	S	-		
3	8.6	28.2	Fine sand	F	-		
4	11.6	38.1	Grey clay	S	-		
5	12.6	41.4	— " —	S	-		
6	13.6	44.6	Grey clay with some gravels	M	0.3	-60 +85	
7	17.6	57.8	Bedrock — Dolerite				

a. Alluvium thickness (ft) : 44.6
b. Theoretical pipe volume to tin-bearing depth (ft³) : 15.57
c. Percentage of +¼" fraction: : Trace
d. Combined concentrate est'd. weight (gm) : 0.3
e. Combined concentrate corr. weight (gm) : -
f. Average field value (lb/ft³) : Trace
g. Tin assay. : -
h. Average value (corr. to 72% Sn) (lb/ft³): Trace

PREUSSAG AUSTRALIA PTY. LTD.

6475252

052

ALLUVIAL DRILL HOLE LOG SHEET

Tenement number & name : E.L. 19/77 - Rivigrooma
Prospect number & name :
Location of area : N.E. Tasmania.
Date & time drilling commenced : 5-4-79 2.30 pm.
Date & time drilling completed : 5-4-79 3.15 pm.

Borehole number :
Borehole reference : RDH 24
Position of borehole : On peg
Collar level : +40'
Cutting shoe ϕ : 8"

Section no.	Depth m.	Depth ft.	Ground description	Ground type (F, M, S.)	Tin concentrate. Est'd wt. (gm)	Tin concentrate. Dom. size range (#BS)	Remarks.
1	2.61	8.6	Silty sand with "hardpan"	F	0.01	-8 +100	
2	8.61	28.2	Grumsh clay - dolerite	S	—		
3	10.10	33.1	Bedrock - Congl. dolerite				

a. Alluvium thickness (ft) : 8.6
b. Theoretical pipe volume to tin-bearing depth (ft³) : 8.73
c. Percentage of +¼" fraction: : Nil
d. Combined concentrate est'd. weight (gm) : 0.01
e. Combined concentrate corr. weight (gm) : -
f. Average field value (lb/ft³) : Trace
g. Tin assay. : -
h. Average value (corr. to 72% Sn) (lb/ft³) : Trace

PREUSSAG AUSTRALIA PTY. LTD.

6476/63

APPENDIX 5.

TEN ASSAYS.

647055

054 M 1588

DEPARTMENT OF MINES—TASMANIA

Geochemical Reports

TELEPHONES:
Metallurgical Research .. ..
Laboratory .. .. ..
Mines Inspection .. .. ..
Explosives & Inflammable Liquids
} 44 2431-2 (2 lines)

LAUNCESTON OFFICES
287 WELLINGTON STREET
SOUTH LAUNCESTON 7250

26th March 1979

Preussag, Australia Pty Ltd,
Farrer House, 4th Floor,
24-28 Collins Street,
Melbourne,
VICTORIA 3000

Your Ref. GKK/jsp

Reg. Nos 790579-585 Your P.O. No 1218

Dear Sir,

Please find below mass and tin assay on above samples from your Ringarooma River tin prospect.

I would point out to you that in obtaining the high grade tin concentrates you have most certainly lost tin in the concentration process.

Reg. No.	Mass (g)	Assay (%Sn)	Drill Hole No.
790579	3.7	67.1	RDH 1
580	3.6	72.5	" 2
581	40.6	70.4	" 3
582	104.1	73.3	" 4
583	1.3	70.9	" 5
584	14.7	71.0	" 7
585	20.6	69.7	" 8

Yours faithfully,

Analyses by..... Mrs J. Lethbridge

(H. K. Wellington
Chief Chemist & Metallurgist.

055 M 1588

647056

DEPARTMENT OF MINES—TASMANIA

TELEPHONES:
Metallurgical Research .. .. } 44 2431-2
Laboratory .. .. .. } (2 lines)
Mines Inspection .. .. ..
Explosives & Inflammable Liquids

LAUNCESTON OFFICES
287 WELLINGTON STREET
SOUTH LAUNCESTON 7250

23rd April 1979

Preussag, Australia Pty Ltd,
Farrer House, 4th Floor,
24-28 Collins Street,
Melbourne
VICTORIA 3000

Attn. Mr. D. Hall

Reg. Nos. 790753-62

Dear Sir,

Please find below mass and tin assay on above samples from your Ringarooma Area, submitted to this laboratory on the 9th Apr'79

Reg. No.	Drill Hole	Mass (g)	(d)	Assay (%Sn)	Drill Hole No.
790753	10	22.6	23.4	70.7	RDH 10
754	11	1.5	1.3	60.2	" 11
755	12	13.9	13.8	72.1	" 12
756	13	13.8	13.9	65.0	" 13
757	14	24.7	24.8	62.8	" 14
758	16	7.7	7.7	65.5	" 16
759	17	34.4	34.6	67.6	" 17
760	18	30.9	30.4	64.7	" 18
761	19	3.1	3.1	72.0	" 19
762	20	8.5	8.4	66.3	" 20

Yours faithfully,

(H. K. Wellington)
Chief Chemist & Metallurgist.

Analyses by L.A.H. Hay.

Fee. $50.00

056

FIG. 1.

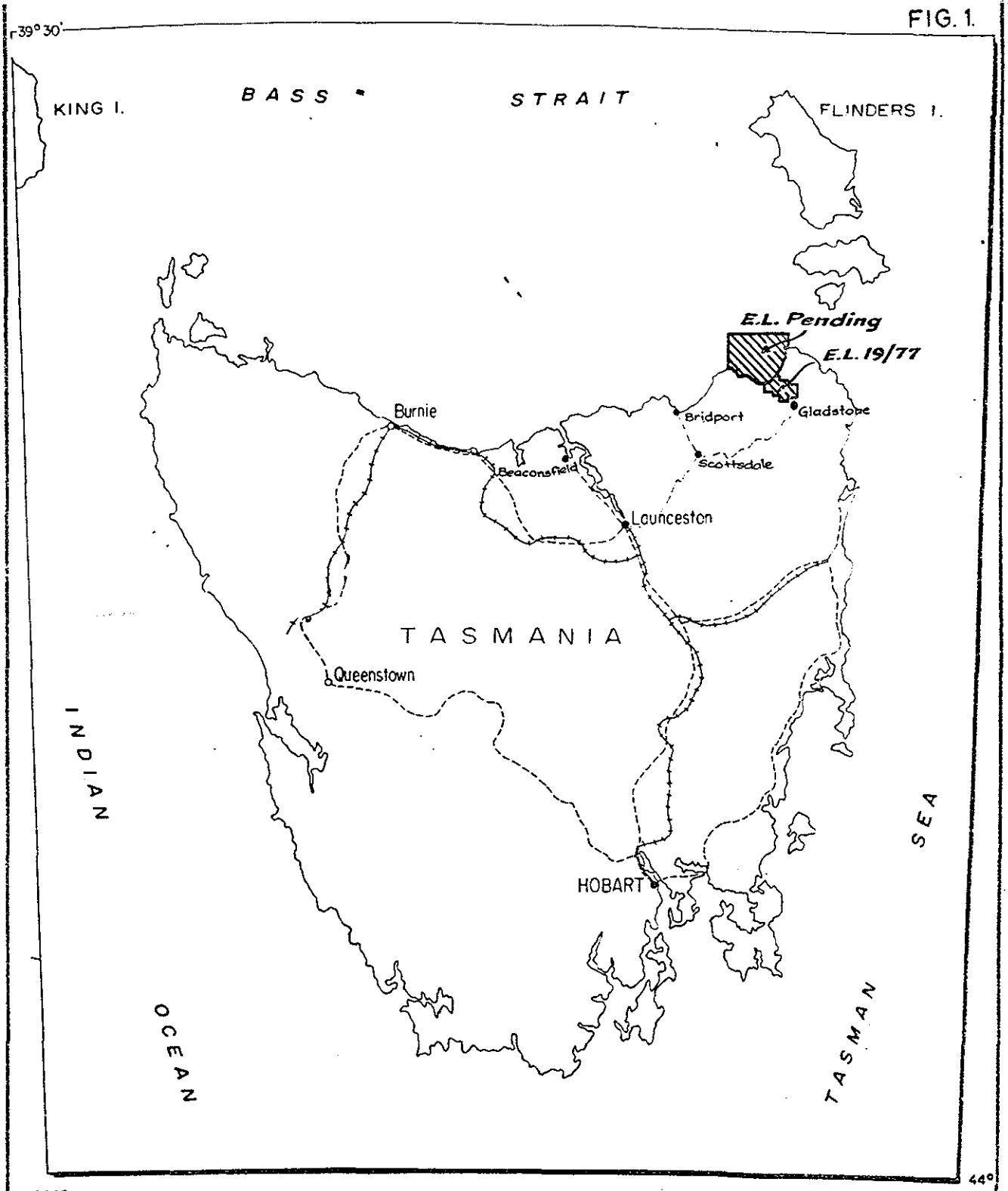


FIG. 1

Prepared: D.B.H.	PREUSSAG AUSTRALIA PTY. LTD.	Date: July 1978
Drawn: A.S.C.	N.E. TASMANIA ~ ALLUVIAL TIN PROSPECT LOCATION MAP	A4-246

057

Prepared: J.H.H.

Drawn: A.S.C.

PREUSSAG AUSTRALIA PTY. LTD.

RINGAROOMA AREA - TAS. DRILL HOLE LOCATIONS

ROTARY DRILLING RESULTS - MARCH 1979

Date: April 1979

A4-268

FIG. 2

20 — Drill hole and number.
10·60 — Alluvium depth (m)
11·90 — Total depth (m)
M, 0·01 — Av. field value (lb/yd³)
Bedrock: C - conglomerate.
D - dolerite.
DC - doleritic congl.
M - mudstone.
S - sandstone.

20 24·30 26·61 M, 0·02
21 22·08 25·61 M, Tr.
22 19·00 19·61 DC, Tr
14 17·61 23·61 DC, 0·08
16 19·00 19·91 DC, 0·02
17 20·10 22·21 DC, 0·10
18 19·00 20·61 DC, 0·09
13 19·10 20·61 DC, 0·04
15 16·60 21·81 DC, Tr
8 15·71 18·61 C, 0·08
6 5·51 8·00 D, Tr
9 not drilled
10 12·00 15·21 C, 0·12
19 16·00 20·61 C, 0·01
5 9·00 11·51 S, 0·01
4 17·00 22·70 S, 0·39
11 17·61 19·69 C, Tr.
3 22·71 45·60 S, 0·12
12 18·50 21·81 M, 0·05
2 21·50 22·71 S, 0·01
23 13·61 17·61 D, Tr
1 19·87 21·21 S, 0·01
7 8·61 14·61 M, 0·11
24 2·61 10·10 DC, Tr

50'

Taylors Pasture

S.R. 32/10

E.L. 19/77

5 cm

CHAINS
0 40 80

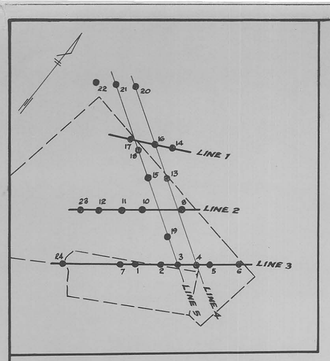
50mm = 80ch

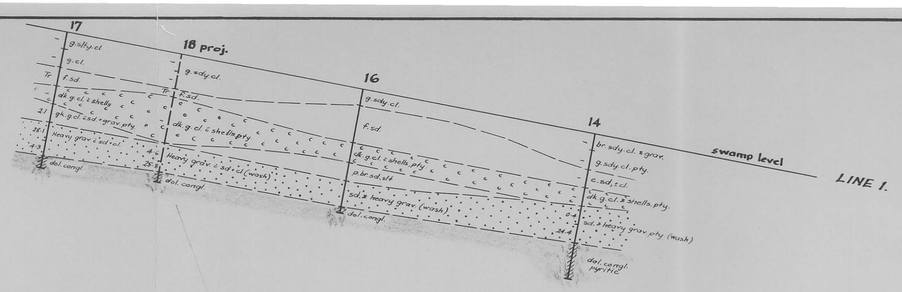
1:32187

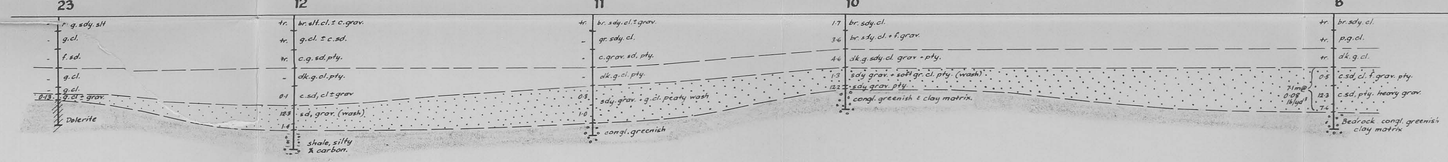
6476558

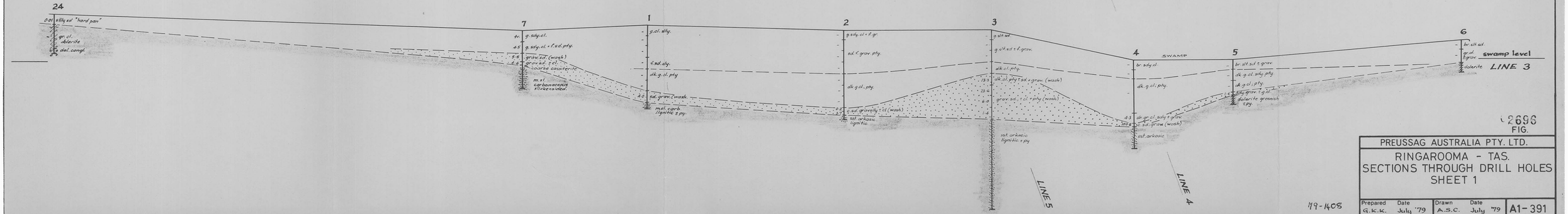
FIG. 2

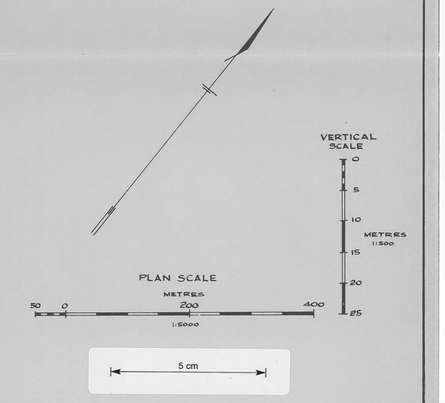
647059 FIG.











Symbols used:

sst.	sandstone.
slt.	siltstone.
slty.	silty.
sd.	sand.
sdy.	sandy.
br.	brown.
p.	pale.
g.	grey.
cl.	clay.
cly.	clayey.
dk.	dark.
c.	coarse.
gr.	green.
pty.	peaty.
grav.	gravel.
f.	fine.
mst.	mudstone.
py.	pyrite.
dol.	dolerite.

24 panned concentrate (gm. Sn)

Drill holes prefixed R.D.H.

12696 FIG.

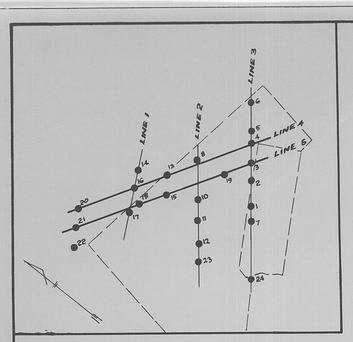
PREUSSAG AUSTRALIA PTY. LTD.

RINGAROOMA - TAS.
SECTIONS THROUGH DRILL HOLES
SHEET 1

Prepared	Date	Drawn	Date	
G.K.K.	July '79	A.S.C.	July '79	A1-391

49-1408

647060 FIG.



LINE 1.

LINE 2.

LINE 3

LINE 4

LINE 5

.14 .8 .5 .2 .10 .1 .11 .7 .12 .22 .23

16
- g sdy cl
- f sd
- Tr dk g cl & shells pty
- p br sdy silt
- 3.1 sd & heavy grav (wash)
- 4.1 dol congl

14 proj. 330m.
- br sdy cl & grav
- g sdy cl. pty
- 0.4 c sd ± cl
- dk g cl & shells pty
- 3.4 sd & heavy grav pty (wash 2m)
- dol congl

13
- Tr br silty cl
- Tr br silty cl ± grav pty
- Tr B.g cl pty
- br g cl pty & shells
- 0.3 d g cl. ± grav.
- 3.4 c grav. sd pty (wash)
- 4.5 sd + heavy gr. grav (wash)
- dol congl

8 proj. 120m.
- Tr br sdy cl
- Tr p g cl.
- Tr dk g cl. sdy
- 0.5 c sd & cl + grav pty
- 2.5 c sd pty & heavy grav. (wash)
- congl. gravels

4 Swamp level
- br sdy cl
- dk g cl pty
- 4.3 dk g cl sdy. grav
- 10.6 sd heavy grav & cl (wash)
- sst. arkosic

3 Swamp level
- g silty cl.
- g silty sd ± f grav
- dk cl pty
- 8.3 dk cl & sd + grav (wash)
- 25.6 grav sd cl. pty
- 27.4 sst arkosic lignitic spy

19
- Tr g cl. sd & hardpan + f grav
- Tr g cl. sd & hardpan + f. grav. pty
- dk g cl. pty
- 3.1 dk g cl & sd heavy grav.
- 5.1 sd + heavy grav. (wash)
- congl

15
- br sdy cl
- p g cl.
- f cl cly
- dk g cl & shells pty
- d g cl. pty
- 4.8 g & grav + sdy cl pty (wash)
- dol congl

17 proj. 75m
- gr silty cl.
- g cl.
- f sd
- dk g cl & shells
- dk g cl & d g + grav pty
- 2.1 dk g cl & sd + cl (wash)
- 2.8 heavy grav & sd + cl (wash)
- 4.3 dol congl

18
- g sdy cl.
- f sd
- d g cl & shells pty
- heavy grav, sd + cl (wash)
- dol congl

20
- Tr g f sd + f grav. hardpan
- Tr c grav. sd. pty.
- Tr c sd. pty
- f sd.
- dk g cl
- 1.8 sd + heavy grav & cl
- gr cemented sd.
- 2.0 sdy grav. wash
- 2.5 mst carbonaceous

21
- 0.1 br f sd & hardpan
- Tr c + f grav.
- g f sd.
- g cl. pty
- 0.1 heavy grav & cl
- 0.9 mst lignitic

Symbols used:

sst.	sandstone.
slt.	siltstone.
silty.	silty.
sd.	sand.
sdy.	sandy.
br.	brown.
p.	pale.
g.	grey
cl.	clay.
cly.	clayey.
dk.	dark.
c.	coarse.
gr.	green.
pty.	peaty.
grav.	gravel.
f.	fine.
mst.	mudstone.
py.	pyrite.
dol.	dolerite.

24 panned concentrate (gm. 6m.)
Drill holes prefixed R.D.H.

VERTICAL SCALE
0
5
10
METRES 1:500
15
20
25

PLAN SCALE
METRES
50 0 200 400
1:5000

5 cm

(2397 FIG.

PREUSSAG AUSTRALIA PTY. LTD.

RINGAROOMA - TAS.
SECTIONS THROUGH DRILL HOLES
SHEET 2

Prepared	Date	Drawn	Date	
G.K.K.	July '79	A.S.C.	July '79	A1-392

79-140 8