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PIONEER SILICON INDUSTRIES PTY. LTD.

91-3276.

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Channel Highway,
ELECTRONA
TASMANIA 7054

EXPLORATION LICENCE 19/89 - LAKE MIKANY

ANNUAL REPORT : YEAR 1
(RELINQUISHMENT REPORT)

OPEN FILE

Peter Hofto
Geologist

April 1991

91-3276.

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TENEMENT INFORMATION

EL 19/89 is a 22 square kilometre tenement comprised of two blocks located near Smithton, northwest Tasmania. Part 1 comprises 10.6 square kilometres in the vicinity of, and extending north and west from, Lake Mikany. The 10.6 square kilometre Part 2 has the mouth of the Black River in the northeast portion of the block and extends in a southwesterly direction towards South Forest (Figure 1, page 2).

Part 1 is comprised of (Figure 1, p 2):

Private Property
Crown Land
Forest Reserve

and excludes:

157 ha Mining Leases
2 ha Gravel Reserve
22 ha Council Reserve
59 ha Crown Land (Lake Mikany - Water Supply)

Six mineral leases currently held over Beacom Hills within Part 1 of EL19/89 are as follows (Plan 1):

Lease	Area (ha)	Lessee/s
1279P/M	30	T.J. & M.J. Leis
1085P/M	11	M.K. & G.J. Francombe & P. McBain
1179P/M	39	J.R & J.H. Amlet
1398P/M	20	W.E Purdy
879P/M	41	Municipality of Circular Head
23M/89	16	Pioneer Silicon Industries Pty. Ltd.

Part 2 is comprised of (Figure 1, p 2):

Private Property
Crown Land
Crown Land (Subject to Lands Department Approval)

and excludes:

6ha Commonwealth of Australia

The licence is owned 100% by Pioneer Silicon Industries Pty. Ltd.

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Figure 1. Location Map & Land Tenure - EL 19/89 (1:100,000).

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EL 19/89
PART 1

EL 19/89
PART 2

5470

5460

TROWUTTA 7km

CIRCULAR HEAD

AGNETIC VARIATION: True, Grid and Magnetic North are shown agrammatically for the centre of this map. Magnetic north is correct for 85 and moves easterly about 0.1° every two years.

GN
TN
MN
GRID CONVERGENCE 1.2°
GRID/MAGNETIC ANGLE 10.9°

5 cm

UNIVERSAL GRID REFERENCE

GRID ZONE DESIGNATION	55G
100 000 METRE SQUARE IDENTIFICATION	CQ

To give a standard reference to the nearest 100 metres

	Easting	Northing
1 State name and number of this map:		
2 Locate first VERTICAL grid line to the left of point and read large figures only in either the top or bottom margin e.g.	56	
Estimate tenths from grid line to point e.g.	8	
3 Locate first HORIZONTAL grid line below the point and read large figures only in either the left or right margin e.g.		86
Estimate tenths from grid line to point e.g.		1
SAMPLE POINT △143 THE NUT	568	861

To give full grid reference, prefix with Grid Zone Designation and 100 000 metre Square Identification letters e.g. 55GCQ568861

Kilometres 2 1 0 2 4 6 8 10 Kilometres

SCALE 1:100 000

1 centimetre represents 1 kilometre

Built-up area; National route marker

Roads for continuous public use — sealed / unsealed

Primary road with route number

Secondary road with route number

Minor road with route number

Minor road within congested area

Roads of restricted use or access

Other roads; Bridge

Vehicular track; Gate

Walking track, position approximate

Railway; Tunnel; Bridge

Light railway or tramway

Power transmission line

Levee or bank; Landmark area

Landmark object; Quarry, mine or gravel pit ○ tower

Building; Ruin □ ruin

Trig station, beacon or cairn △

Contour with value; Depression contour

Lake or reservoir; Watercourse

Swamp

Tank or small dam; Reservoir

Breakwater; Pier; Wharf

Wreck, exposed; Lighthouse or navigation light

Rock, bare or awash; Tidal flat

Tidal reef; Rock ledge

MEAN TEMPERATURE °C 40 30 20 10 0 5
J F M A M J J A S O N D

MEAN RAINFALL mm 160 120 80 40 0
J F M A M J J A S O N D

station: SMITHTON P.O elevation 8m.
For temperatures at higher elevations subtract 1°C for every 100 metres above station

LAND TENURE INDEX INFORMATION is current to May'85.. Due to limitations in scale, some areas of land tenure within built-up areas or areas of less than two hectares are not depicted. Colours are designed to indicate the prime managing authority. The indication of a particular land status does not imply right of entry or use. Boundaries of Crown land extend to low water mark.(lwm)
For full particulars, users are requested to consult the Registrar General's Division, Law Department; or the Survey Division, Lands Department.

Private Freehold Land

Forestry Commission: State Forest; with Forest Reserve

Timber Reserve

Lands Department: Land Recreation Area

Administrative Reserve, purpose (gravel)

Leased or Non-Allocated Crown Land

National Parks & Wildlife Service: State Reserves, etc.

N P & W S administered Conservation Area

Hydro Electric Commission

Commonwealth Administered (CofA)

Council Administered

Municipality boundary

Boundary location uncertain or indefinite

Conservation Area boundary

EXPLORATION PHILOSOPHY & OBJECTIVES

The primary exploration aim of Pioneer Silicon Industries Pty. Ltd. is to locate high grade silica deposits to increase available tonnages for it's plant at Electrona.

Significant high grade quartzite deposits occur with the Late Precambrian - (?)Cambrian Forest Conglomerate and Quartzite in the vicinity of Smithton (Unit Plf, Department of Mines 1:50,000 Smithton Sheet). Pioneer has recognised the potential of these quartzites through its detailed investigation of its mining leases at Beacom Hills (Plan 1). Exploration has shown that secondary silicification is a major factor in the upgrading of the quality of the quartzite into the specified range necessary for Pioneer's operations. This secondary silicification phenomenon is the prime exploration target for Pioneer as the primary quartzites are often of too low a grade to be of economic benefit.

Through a program of mapping and sampling, Pioneer aims to assess the potential reserves within the Precambrian silica zone.

OVERVIEW OF GEOLOGY

The Late Precambrian - (?)Cambrian Forest Conglomerate and Quartzite unconformably overlies the Cowrie Siltstone (Rocky Cape Group) and is overlain by the Smithton Dolomite. The formation usually consists of a basal siliceous conglomerate overlain by white quartzite.

In some areas the basal conglomerate units are missing (Beacom Hills), while in other areas there appear to be several conglomerate horizons (Black River area). In the region of Beacom Hills, the formation is represented by at least 120m of white quartzite which is currently being extensively quarried (Brown, 1989, pp 20-21).

SUMMARY OF WORK COMPLETED IN YEAR 1.

The Year 1 exploration was comprised of:

- Reconnaissance mapping of quartzite horizons.
- Reconnaissance sampling of quartzite outcrop and subsequent assay for contaminants (Al_2O_3, Fe_2O_3 and TiO_2).

DETAILS OF SPECIFIC SURVEYS

A reconnaissance sampling programme of the Forest Conglomerate and Quartzite within Parts 1 and 2 of EL19/89 was undertaken, with twelve 1-2kg samples being removed from each part of the tenement (24 samples in total). The samples were subsequently assayed by Pioneer Silicon Industries Pty. Ltd. for Al_2O_3, Fe_2O_3 and TiO_2.

The preferred specifications for Pioneer Silicon Industries Pty. Ltd. are as follows:

	allowable	**preferred**
	%	**%**
Al_2O_3	0.1	<0.05
Fe_2O_3	0.04	<0.04
TiO_2	0.07	<0.04

However, material with maximum specifications of:

	%
Al_2O_3	0.25 - 0.30
Fe_2O_3	0.1
TiO_2	0.1

may be incorporated within a larger bulked sample provided the overall weighted specifications are suitable. Sample assay results for Part 1 and Part 2 of the EL are presented below (Tables 1 & 2, pp 5 & 6 respectively).

The resource potential for each of the sample sites was assessed on the basis of these analyses together with the present land tenure and land use, and the suitability of these areas to mining activities. Individual sample site assessments are presented in appendices 1 and 2 respectively and a regional summary is presented below.

REGIONAL SUMMARY

Although samples taken from sites immediately north and west of Lake Mikany (Sites 17 & 18) returned favourable analyses, the area must be ruled out from being prospective due to the proximity to Lake Mikany (Licence Condition 13).

The majority of silica resource within Part 1 is represented by the large unit of quartzite, immediately south of the Bass Highway, which constitutes Beacom Hills. The unit comprises the western and eastern slopes and ridgelines with all previous mining, and the majority of previous exploration, concentrating on the western portion. Five sites on the western side of Beacom Hills were sampled (Sites 20 & 22-25). Site 20 returned extremely high levels of Al_2O_3 and TiO_2 but samples from the area to the south (Sites 22-25) all yielded low levels of impurities. This survey indicates that there is a high potential for a substantial strip of high grade quartzite east of mining leases 1279P/M, 1085P/M and 23M/89. Due to the lack of outcrop

Table 1. Sample assays, EL 19/89 - Part 1 (Samples 17-20, 22-29).

Sample	AMG Co-Ords	Al_2O_3	Fe_2O_3	TiO_2
17	346 900mE, 5 473 100mN	0.043	0.010	0.021
18	346 200mE, 5 472 800mN	0.053	0.010	0.025
19	346 100mE, 5 473 500mN	0.12	0.014	0.025
20	345 300mE, 5 474 200mN	>1.00	0.047	0.11
22	345 400mE, 5 474 000mN	0.048	0.007	0.025
23	345 350mE, 5 473 700mN	0.062	0.009	0.025
24	345 300mE, 5 473 400mN	0.058	0.014	0.034
25	345 000mE, 5 473 100mN	0.043	0.009	0.034
26	345 600mE, 5 474 400mN	0.053	0.012	0.029
27	346 200mE, 5 474 200mN	0.048	0.008	0.021
28	346 100mE, 5 474 300mN	0.83	0.025	0.034
29	346 000mE, 5 473 700mN	>1.00	2.52	0.25

Table 2. Sample assays, EL 19/89 - Part 2 (Samples 2-13).

Sample	AMG Co-Ords	Al_2O_3	Fe_2O_3	TiO_2
2	356 500mE, 5 476 800mN	0.60	0.016	0.013
3	357 100mE, 5 476 700mN	0.81	0.032	0.021
4	357 200mE, 5 476 600mN	>1.00	0.047	0.034
5	356 600mE, 5 476 400mN	0.32	0.043	0.038
6	355 600mE, 5 476 100mN	0.27	0.040	0.025
7	354 300mE, 5 477 200mN	0.23	0.018	0.029
8	354 200mE, 5 474 900mN	0.85	0.072	0.021
9	354 400mE, 5 474 200mN	>1.00	0.14	0.046
10	354 100mE, 5 473 900mN	0.76	0.090	0.029
11	352 300mE, 5 473 400mN	0.13	0.16	0.008
12	353 300mE, 5 472 700mN	>1.00	2.77	0.29
13	352 100mE, 5 472, 100mN	0.072	0.032	0.11

and dense vegetation, the eastern extent of the quartzite on the western ridge is unknown. Ware (1983), through an airtrack drilling programme, delineated an area of potential silica resource immediately to the south and east of 23M/89 but also failed to locate the eastern extent of the unit. The southern extent of the Forest Conglomerate and Quartzite appears to controlled by an east-west trending fault, approximately 300m south of Pioneer Silicon Industries' 23M/89 (Ware, 1983).

No in situ bedrock was observed on the eastern slope and ridgeline of Beacom Hills. Samples 19 and 27-29 were taken from recently disturbed material. Samples 19 and 27, taken from midslope, returned reasonable analyses, whilst samples 28 and 29 , taken from the ridgeline, contain extreme levels of Al_2O_3. There is potential for a significant resource along this eastern ridge.

Part 2 of EL 18/89 contains three major blocks of Forest Conglomerate and Quartzite, none of which are considered prospective for Pioneer Silicon Industries Pty. Ltd. The northeastern-most region consists of two east/west trending ridges of Forest Conglomerate and Quartzite, one on each bank of Black River near the river mouth (Sample Sites 2-6). Samples from all five sites returned unacceptable levels of Al_2O_3 (Site 4: Al_2O_3 >1.00%). The elongate nature of the outcrop, and the proximity of the river and its associated reserves, also reduce the prospectivity of this area.

The central block within Part 2 contains one continuous ridge of Forest Conglomerate and Quartzite (Sites 7-10) which basically follows the line of Ferny Bridge Road. Samples returned consistently high levels of Al_2O_3 (Site 9: Al_2O_3 > 1.00%) and Fe_2O_3 (Site 9: Fe_2O_3 = 0.14%). As in the northeastern region, the ridge is narrow (maximum width approximately 150m) and considered to be of little interest to Pioneer Silicon Industries Pty. Ltd.

In the southwestern block (Sites 11-13) the formation is represented by four small isolated outcrops around the township of South Forest. All samples returned high values for Al_2O_3 with samples 11 and 12 also containing unacceptably high values of Fe_2O_3. Sample 13 returned a high level of TiO_2 (TiO_2 = 0.11%), the sample site representing only a portion of an elongate ridge of Forest Conglomerate and Quartzite, most of which lies west of the EL boundary.

The limited extent of outcrop, poor analyses and proximity to the South Forest township, result in this block also being of low prospectivity.

CONCLUSIONS & RECOMMENDATIONS

It is recommended that Part 1 of EL19/89 be further explored, targeting the western and eastern slopes and ridgelines of Beacom Hills. The northern and eastern extent of the quartzite on Beacom Hills must be determined in order to estimate the extent of the resource. The presence of quartzite on the the eastern slope and ridgeline of Beacom Hills should also be further investigated.

The results of the Year 1 sampling programme indicate that Part 2 of EL19/89 is unprospective for Pioneer Silicon Industries Pty. Ltd. and should be relinquished.

PROPOSED FUTURE EXPLORATION

Future exploration will focus on the Beacom Hills target as delineated by the Year 1 program. This may include:

- Establishment of a grid over the prospective quartzite zone.
- Geological mapping, sampling and assay.
- Percussion drilling of the target to indicate its northern and eastern extent, and to estimate tonnage and grade.
- Removal of a bulk sample to assess mining yield through screening tests.
- Trial furnace tests to assess smelting properties.

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BIBLIOGRAPHY

BACON, C.A. 1989. Silica. *Miner. Resour. Tasm.* 12.

BROWN, A.V. (comp.) 1989. Geological atlas 1:50,000 series. Sheet 21 (7916S). Smithton. *Explan. Rep. Geol. Surv. Tasm.*

WARE, M.D. 1982. *Quartzite Quarry, Smithton - Tasmania. EL29/80.* Amdel [TCR 83-1977].

APPENDIX 1
SAMPLE SITE DESCRIPTIONS - PART 1, EL 19/89.
SITES 17-20, 22-29.

NOTE : All samples taken from quartzite member of Forest Conglomerate and Quartzite.

SITE 17

AMG : 346 900mE, 5 473 100mN

LAND TENURE : Water Reserve
Private Freehold

OWNERSHIP : Smithton Municipality
Isabel Robertson

POSITION OF OUTCROP : On side of Reservoir Road near carpark at Lake Mikany.

DESCRIPTION OF OUTCROP : Small ridge - minimal outcrop.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.043
Fe_2O_3	0.010
TiO_2	0.021

PROSPECTIVITY : Favourable chemical analyses for all three majors tested. 1:50,000 Geological Map indicates only minimal outcrop in this specific area. Difficulties may arise due to the close proximity to the Lake Mikany Water Reserve.

SITE 18

AMG : 346 200mE, 5 472 800mN

LAND TENURE : Timber Reserve

OWNERSHIP : Forestry Commission

POSITION OF OUTCROP: From small ridge above track around Lake Mikany.

DESCRIPTION OF OUTCROP : Grab sample of surface float. No obvious bedrock. Ridge mapped as Forest Conglomerate.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.053
Fe_2O_3	0.010
TiO_2	0.025

PROSPECTIVITY : Good chemical analysis. Major concern with location of material above Lake Mikany Forest Reserve.

SITE 19

AMG : 346 100mE, 5 473 500mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP: Eastern ridge of Beacom Hills at junction between pasture and teatree scrub.

DESCRIPTION OF OUTCROP : Grab sample of quartzite from side of ridge. No in situ bedrock observed.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.12
Fe_2O_3	0.014
TiO_2	0.025

PROSPECTIVITY : Chemical analysis quite favourable despite slightly high aluminium content. Ridge looks promising - should be considered with other samples of same unit on this Beacom Hills ridge.

SITE 20

AMG : 345 300mE, 5 474 200mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP: Immediately east of quartzite quarry on 1279P/M (T.J. & M.J. Leis) on side of access track.

DESCRIPTION OF OUTCROP : Quartzite exposed in cutting of access track. Bedding dips steeply (55^0) to the northwest.

CHEMICAL ANALYSIS :

	%
Al_2O_3	>1.00
Fe_2O_3	0.047
TiO_2	0.11

PROSPECTIVITY : Chemical analyses poor with high proportions of aluminium and titanium. However this area may be suitable depending of analysis of samples from immediate area.

SITE 22

AMG : 345 400mE, 5 474 000mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP: East of Leis' quartzite quarry (1279P/M), upslope from the track joining northern and southern pits.

DESCRIPTION OF OUTCROP : Outcrop continuous from Site 20. Bedding dips steeply to the northwest. Quartzite extends at least to the top of the ridge line.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.048
Fe_2O_3	0.007
TiO_2	0.025

PROSPECTIVITY : Excellent chemical analysis. Highly prospective. This analysis, compared with that from Site 20, illustrates the variability of impurities over a limited distance.

SITE 23

AMG : 345 350mE, 5 473 700mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP: Immediately to the east 1085P/M (M.K. & G.K. Frankombe) in thick teatree scrub on peaty soil.

DESCRIPTION OF OUTCROP : Small outcrop but suggests a continuation of material from the Francombe pit. Continuation on ridge line south from Site 22.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.062
Fe_2O_3	0.009
TiO_2	0.025

PROSPECTIVITY : Excellent chemical analysis. Comments and prospectivity similar to those for Site 22.

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SITE 24

AMG : 345 300mE, 5 473 400mN

LAND TENURE : Private Freehold

OWNERSHIP : Gordon Francombe

POSITION OF OUTCROP: Immediately east of Pioneer's mining lease 23M/89. Sample from side of small track.

DESCRIPTION OF OUTCROP : Quartzite member of Forest Conglomerate. Sample from small cluster of outcrops amongst thin vegetation on small track. Attitude of beddingundetermined.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.058
Fe_2O_3	0.014
TiO_2	0.034

PROSPECTIVITY : Good chemical analysis and potential for significant resource as a continuation of the ridge from Site 23 and upslope from Pioneer's current mining lease. Highly prospective.

SITE 25

AMG : 345 000mE, 5 473 100mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP: Immediately south of Pioneer's 13M/87.

DESCRIPTION OF OUTCROP : Small outcrop. Bedding dips at approximately 45^0 to the northeast.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.043
Fe_2O_3	0.009
TiO_2	0.034

PROSPECTIVITY : This is the southern most sample on the western ridge at Beacom Hills. The favourable analyses suggest that this ridge is highly prospective.

SITE 26

AMG : 345 600mE, 5 474 400mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP: Site of unmapped track between western and eastern "flanks" of Beacom Hills.

DESCRIPTION OF OUTCROP : No in situ outcrop. Sample of white quartzite surface float only. Quartzite similar to that observed on the western ridge at sites 20 - 25.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.053
Fe_2O_3	0.012
TiO_2	0.029

PROSPECTIVITY : Good chemical analysis. This may be an extension of the southern area and is therefore considered prospective.

SITE 27

AMG : 346 200mE, 5 474 200mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP: Side of an unmapped road above the Deep Creek river reserve.

DESCRIPTION OF OUTCROP : No in situ outcrop. Sample from gravel at the base of a large upturned tree.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.048
Fe_2O_3	0.008
TiO_2	0.021

PROSPECTIVITY : Excellent analysis. The ridge above, immediately to the west of Site 27, is considered highly prospective.

SITE 28

AMG : 346 100mE, 5 474 300mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP: Side of north/south trending track on the eastern side of Beacom Hills.

DESCRIPTION OF OUTCROP : Author uncertain as to whether sample is from in situ bedrock. Sample possibly taken from very large quartzite blocks.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.83
Fe_2O_3	0.025
TiO_2	0.034

PROSPECTIVITY : Although a relatively high level of aluminium was returned, the area is considered prospective. This eastern ridge on Beacom Hills has undergone only limited testing in the past and may contain significant quantities of material suitable for Pioneer Silicon Industries Pty. Ltd.

SITE 29

AMG : 346 000mE, 5 473 700mN

LAND TENURE : Private Freehold

OWNERSHIP : Mervyn Kay

POSITION OF OUTCROP : Eastern Beacom Hills.

DESCRIPTION OF OUTCROP : Grab sample of white quartzite material uncovered by dozer during grading of track.

CHEMICAL ANALYSIS :

	%
Al_2O_3	>1.00
Fe_2O_3	2.52
TiO_2	0.25

PROSPECTIVITY : Poor chemical analysis and lack of outcrop make assessment of this site from such a cursory examination difficult. Poor analysis suggests low prospectivity.

APPENDIX 2

SAMPLE SITE DESCRIPTIONS - PART 2, EL 19/89. SITES 2-13.

NOTE : All samples taken from quartzite member of Forest Conglomerate and Quartzite **unless otherwise stated**.

SITE 2

AMG : 356 500mE, 5 476 800mN

LAND TENURE : Commonwealth of Australia

OWNERSHIP : Australian National Railways

POSITION OF OUTCROP: 100m south of Bass Highway at wood loading yard for railway

DESCRIPTION OF OUTCROP : Sample taken from western end of east/west ridge. Forest Quartzite dips moderately (20^0) to the south. Some material has been distributed when constructing the wood loading yard.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.60
Fe_2O_3	0.016
TiO_2	0.013

PROSPECTIVITY : The chemical analysis shows unacceptably high aluminium content. The ridge of quartzite is limited to approximately 600m in length and is in such a position with respect to the main highway and Black River that prospectivity must be considered to be very limited.

SITE 3

AMG : 357 100mE, 5 476 700mN

LAND TENURE : Crown Land

OWNERSHIP : Lands Department

POSITION OF OUTCROP: Immediately to the west of the Bass Highway on the northern bank of the Black River

DESCRIPTION OF OUTCROP : Sample of conglomerate member of Forest Conglomerate and Quartzite taken from eastern end of ridge mentioned in Site 2. Bedding dips approximately 15^0 to the south. Ridge raised approximately 5m above surrounding ground.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.81
Fe_2O_3	0.032
TiO_2	0.021

PROSPECTIVITY : As for Site #2. Chemical analysis indicate high aluminium with suitable iron and titanium.

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SITE 4

AMG : 357 200mE, 5 476 600mN

LAND TENURE : River Reserve

OWNERSHIP : Lands Department

POSITION OF OUTCROP: Immediately west of Bass Highway on the southern bank of Black River.

DESCRIPTION OF OUTCROP : Interbedded conglomerate and quartzite cropping out on the eastern end of the east/west trending ridge immediately south of, and parallel to, Black River. Sample dominantly quartzite. Bedding dips 13^0 to the north.

CHEMICAL ANALYSIS :

	%
Al_2O_3	>1.00
Fe_2O_3	0.047
TiO_2	0.034

PROSPECTIVITY : Poor chemical analysis and close proximity to bridges, highway and Black River rule this area out as a suitable silica resource.

SITE 5

AMG : 356 600mE, 5 476 400mN

LAND TENURE : Private Freehold Land

OWNERSHIP : Lloyd Medwin

POSITION OF OUTCROP: In small road cutting to the south of Boyndey Rd, surrounded by pasture.

DESCRIPTION OF OUTCROP : Sample midway between, and on same ridge as, #4 and #6. Quartzite sample from road side outcrop dipping approximately 40^0 to the north.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.32
Fe_2O_3	0.043
TiO_2	0.038

PROSPECTIVITY : High aluminium content and proximity to Black River reduce the economic value of this ridge of quartzite.

SITE 6

AMG : 355 600mE, 5 476 100mN

LAND TENURE : Private Freehold

OWNERSHIP : Rodney Medwin

POSITION OF OUTCROP: On bank of Black River in slightly wooded area, surrounded by pasture.

DESCRIPTION OF OUTCROP : Sample from top of northerly dipping (40^0) ridge. The ridge continues for approximately 75m over Black River.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.27
Fe_2O_3	0.040
TiO_2	0.025

PROSPECTIVITY : As with sites 4 and 5, the poor chemical analyses and immediate proximity to Black River reduce the suitability of this site.

SITE 7

AMG : 354 300mE, 5 477 200mN

LAND TENURE : Private Freehold

OWNERSHIP : Maxwell Medwin

POSITION OF OUTCROP: 100m south along Ferny Bridge Road from junction with Back Line Road. Road and railway cutting.

DESCRIPTION OF OUTCROP : Outcrop exposed during recent road works excavation. Material of poor strength overall, although some bands of hard brittle quartzite occur within the snaking north/south ridge. Unit dips moderately (27^0) to the west.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.23
Fe_2O_3	0.018
TiO_2	0.029

PROSPECTIVITY : Due to high aluminium content the area is probably non prospective.

SITE 8

AMG : 354 200mE, 5 474 900mN

LAND TENURE : Private Freehold

OWNERSHIP : Trevor Medwin

POSITION OF OUTCROP : 50m north of railway crossing on Ferny bridge Road. Road and railway cutting.

DESCRIPTION OF OUTCROP : Outcrop exposed during recent road works excavation within north/south trending ridge. Unit of poor strength overall, but contains some bands of hard/brittle material.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.85
Fe_2O_3	0.072
TiO_2	0.021

PROSPECTIVITY : Non prospective as for #7.

SITE 9

AMG : 354 400mE, 5 474 200mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP: Highest point of north/south trending ridge 10m west of Ferny Bridge Road. Unit outcrops in a paddock.

DESCRIPTION OF OUTCROP : Several portions of the unit crop out in the paddock.

CHEMICAL ANALYSIS :

	%
Al_2O_3	>1.00
Fe_2O_3	0.14
TiO_2	0.046

PROSPECTIVITY : Extreme chemical impurities rule this area out as a potential silica deposit.

SITE 10

AMG : 354 100mE, 5 473 900mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP: Railway crossing over Murrays Lane 300m west of junction with Ferny Bridge Road.

DESCRIPTION OF OUTCROP : Unit exposed at railway excavation. Southern-most outcrop on north/south ridge.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.76
Fe_2O_3	0.090
TiO_2	0.029

PROSPECTIVITY : Poor chemical analysis of aluminium rule out this outcrop as a suitable for silica resource.

SITE 11

AMG : 352 300mE, 5 473 400mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP: Small abandoned pit immediately to the east of Mengha Road.

DESCRIPTION OF OUTCROP : Limited outcrop. Bedding dips moderately (42^0) to the northwest. Single sample from this small outcrop.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.13
Fe_2O_3	0.16
TiO_2	0.008

PROSPECTIVITY : Extreme Fe_2O_3 and high Al_2O_3 concentrations, together with the proximity to Mengha Road rule out this deposit.

SITE 12

AMG : 353 300mE, 5 472 700mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP : Road cutting at junction of Mengha and Ringle Doddy Roads

DESCRIPTION OF OUTCROP : Very small triangular block of quartzite. Bound to the east by basalt.

CHEMICAL ANALYSIS :

	%
Al_2O_3	>1.00
Fe_2O_3	2.77
TiO_2	0.29

PROSPECTIVITY : This area is non prospective due its limited extent and poor chemical analysis.

SITE 13

AMG : 352 100mE, 5 472 100mN

LAND TENURE : Private Freehold

OWNERSHIP : Unknown

POSITION OF OUTCROP: Outcrop within paddock 300m east of Mengha Road, approximately 0.5km south of South Forest.

DESCRIPTION OF OUTCROP : Unit crops out on an east/west ridge. Bedding dips steeply (65-85^0) to the north. Majority of this ridge of is outside the boundary of EL 19/89.

CHEMICAL ANALYSIS :

	%
Al_2O_3	0.72
Fe_2O_3	0.032
TiO_2	0.11

PROSPECTIVITY : Poor titanium and marginal aluminium, together with the fact that most of this resource lies outside the EL, suggest that this area is of low prospectivity.

9968

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about this **MAP**

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EL 2/87 247 SKM
BUTLERS NO 27 PTY LTD.
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PIONEER SILICON INDUSTRIES
Part 2

EL 19/89
PART 1

EL 19/89
PART 2

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PIONEER SILICON INDUSTRIES PTY. LTD.

PLAN 1. EL 19/89, Lake Mikany - Location Map and Location of Enclosed MLs (1:25,000).

DUCK BAY
Copper Mine Point
Sampsons Point
Morgans Bay
Kennedy Point
Slaughterhouse Point
Flowery Flat
DEEP CREEK BAY
PLAIN
EAST INLET
SAWYER BAY
EMMETT
BLACK RIVER
MOWBRAY
MARTHICKS HILL
Scotchtown
OLLINGTONS HILL
Connelly Hill
Pulbeena
Mackeye
LAKE MIKANY
STATE FOREST
Blackberry Corner
Spion Kop Lookout
Meadow Creek

SMITHTON

1279 P/M 30ha T & M J Lees ML 268/3
917 P/M 30ha ML 263/1
839 P/M MUNIC OF CIRCULAR HEAD 41ha ML 263/4
1089 P/M N K & G J Frankcombe & P McBain ML
433 P/M
432 P/M J R & H F House POKES HILL ML 24/72
1179 P/M 39ha J R & J H Amiet 48
1265 P/M 4ha
1398 P/M 20ha W E Purdy
1340 P/M 6 ha G H W REID ML
39M/90 3ha J J JOHNSON ML 268/14
40M/90 12ha P C Jaeger ML
23M/90 1ha PIONEER SILICON INDUST. PAL ML
Brought within the Mining Act 1929 S.R. 1987, No.32 Gaz. 25 02 87
31M/74 35 HA CIRCULAR HEAD DOLOMITE & TRADING CO PTY LTD ML
31M/51 CIRCULAR HD. DOLOMITE & TRADING CO. ML 24/72
31M/74 CIRCULAR HD. DOLOMITE & TRADING CO. ML 24/72
31M/74 CIRCULAR HD. DOLOMITE & TRADING CO. ML P256
P256

PRODUCTION: Mapping Division, Lands Department, Hobart, 1984.
ACCURACY: Horizontal: 90% of well defined detail is within 12.5 metres of true position. Vertical: 90% of elevations are within 5 metres. These accuracies may not be achieved in areas of dense vegetation.
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GRID: 1000 metre intervals of the Universal Transverse Mercator Grid, Zone 55 (Australian Map Grid). Australian National Spheroid. Grid values are shown in full at the south west corner of the map.
CONTOUR INTERVAL: 10 metres with 50 metre index contours.
WORLD GEODETIC SYSTEM 1972: To convert co-ordinates from this system to Australian Geodetic Datum 1966, increase the value of latitudes by 5.2", equivalent to 160 metres, and decrease the value of longitudes by 4.4", equivalent to 103 metres. To obtain heights increase satellite heights by 2 metres.
MAGNETIC VARIATION: True, Grid and Magnetic North are shown diagrammatically at the centre of this map. Magnetic North is correct for 1984 and moves easterly about 0.1° every two years

GRID-MAGNETIC ANGLE 10°E

Residential area; Commercial buildings
Roads maintained for continuous public use: Primary road with route number; Secondary road with route number; Minor road with route number; Other road
Roads of restricted use or access: Other roads with bridge; Vehicular track with gate
Walking track or horse trail (approximate position) with bridge
Railway with station; Places entered in National Estate Register
Powerline transmission line and pylon positions
Building; Feature of historic or special interest; Ruin; Mine
Post office; Police station; Fire station; School

SCALE 1:25 000
1 millimetre on the map represents 25 metres on the ground

Caravan park; Camping ground; Public toilets
Disposal area; Information centre; Cemetery
Picnic area; Trig station beacon; Spot elevation
Contour with value; Depression contour
Quarry, pit or open cut mine
Rock scree; Broken rocky surface
Dense forest; Medium forest
Low dense vegetation; Distinctive grass
Orchard; Pine plantation
Eucalypt plantation; Submerged trees

Swamp
Wirefence
Wet area; Subject to flooding
Watercart; Rapids
Indefinite shoreline or floodbank; Levee
Total rocks or ledge; Offshore rock
Navigation light or lighthouse; Exposed wreck
Sand; Tidal reef
Saline coastal flat; Tidal flats
Jetty; Launching ramp

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Municipality name and number
Municipality boundary
Ward name
Ward boundary
Town boundary; Other administrative boundaries
Reserve boundary; Vinculum or joining symbol
Property boundary; Land parcel boundary and number
Boundary location uncertain or indefinite

MEAN TEMPERATURE RAINFALL
J F M A M J J A S O N D

UNIVERSAL GRID REFERENCE

GRID ZONE DESIGNATION 55G
100 000 METRE SQUARE IDENTIFICATION CQ

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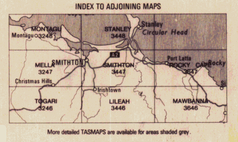
2 Locate first VERTICAL grid line to the left of point and read large figures only in either the top or bottom margin e.g. 41
Estimate tenths from grid line to point: e.g. 7
3 Locate first HORIZONTAL grid line below the point and read large figures only in either the left or right margin e.g. 74
Estimate tenths from grid line to point: e.g. 4
SAMPLE POINT: MARTHICKS HILL 417744
To give full grid reference, prefix with Grid Zone Designation and 100 000 metre Square Identification letters e.g. 55GCQ417744

INDEX TO ADJOINING MAPS



More detailed TASMAPS are available for areas shaded grey

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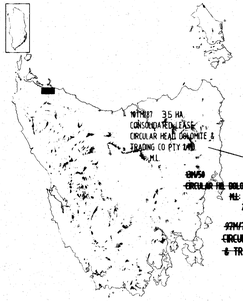
SERIES



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GRID CONVERGENCE 1.2° — GRID-MAGNETIC ANGLE 16.9°

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Primary road with route number
Secondary road with route number
Minor road with route number
Other road
Roads of restricted use or access — Other roads with bridge
Walking track or horse trail (approximate position) with bridge
Railway with station; Places entered in National Estate Register
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Caravan park; Camping ground; Public toilets
Disposal area; Information centre; Cemetery
Picnic area; Trig station beacon; Spot elevation
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Quarry, pit or open cut mine
Rock scree; Broken rocky surface
Dense forest; Medium forest
Low dense vegetation; Distinctive grass
Orchard; Pine plantation
Eucalypt plantation; Submerged trees

SCALE 1:25 000
1 centimetre on this map represents 0.25 metres on the ground
Kilometres

Swamp
Windbreak
Wet area, Subject to flooding
Watertail; Repute
Indistinct, intermittent or floodbank; Levee
Tidal rocks or ledge; Offshore rock
Navigation light or lighthouse; Exposed wreck
Sand; Tidal mat
Saline coastal flat; Tidal flats
Jetty; Launching ramp

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Municipality boundary
Ward boundary
Town boundary; Other administrative boundaries
Reserve boundary; Fire trail or paving symbol
Property boundary; Land parcel boundary and number
Boundary location uncertain or indefinite

MEAN TEMPERATURE RAINFALL
Source: BMTHSTON P.O. elevation 8 m, latitude 41°05' S, longitude 145°55' E, 10 years to 1980
J F M A M J J A S O N D

UNIVERSAL GRID REFERENCE

GRID ZONE DESIGNATION — 55G CQ
100 000 METRE SQUARE IDENTIFICATION
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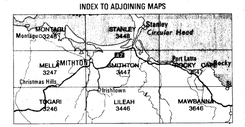

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EAST INLET
SAWYER BAY
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PLAN 2. EL 19/89 - Lake Mikany.
Location of Sample Sites.