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02_4641

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

THE MONARCH PROJECT

MT. CAMERON, GLADSTONE DISTRICT

NORTH EAST TASMANIA

GEOLOGICAL ASSESSMENT

AND

ORE RESOURCE STATEMENT

02_4641

Geological ASssessment and Ore Resource
Statement on the Monarch Project, Mt Cameron,
Mineral Holdings Australia Proprietary Limited*; Niugini
Kinnane, N.R. EL10/2000

PREPARED BY:
NIUGINI RESOURCES PTY., LIMITED.

DATE PREPARED:
28TH August 2001

Neil R. Kinnane – Geologist.
Fell.RMIT., Ass.RMIT (Geology).
FAusIMM, CPGeo., MGSAust., MGSAmer.
MAIG., AssGSCanada.

OVERVIEW

Alluvial tin mining is reported to have commenced in the vicinity of the Monarch project area in the late 1800's to early 1900's with first production records appearing in the Annual Report of the Secretary of Mines for the year 1923. Mining activities were sporadic with the largest producer being the Monarch Tin Mining Company during the period 1922 to the early 1930's.

Since early drilling conducted by the "Monarch Company" during the 1930's, there appears to have been little activity in the area until a drilling program conducted by Mr. V. Woods of Pioneer in late 1963. In the following year The Broken Hill Proprietary Company Limited, under an "Option to Purchase" agreement with Woods, conducted an extensive exploration program over the general Monarch Project area. As a result of their work they reported the delineation of the following resource:

2,909,300 cubic yards at an average grade of 5.8 oz / cubic yard of 70% Sn concentrate at a cut-off of 3.0 oz / cubic yard.

This resource was contained in five resource blocks within three elongated channel deposits trending northwest and roughly parallel to the present drainage pattern. It is unclear if the resource quoted details the grade in terms of "Bank" (In-Situ) or "Loose" (after excavation) cubic yards.

A number of groups conducted brief exploration programs over the project. In early 1970 B.M.I (Blue Metal Industries) commenced active mining of the deposit, the operation ceased in 1973. During the period 1977 to 1980, Amdex Mining Limited held the area under exploration title, with individual resources being held under Mining Lease tenure. Amdex recalculated the resource and quoted the following resource figures:

Possible Ore Reserves

1,801,968 m^3 at an average grade of 353.0 grams / m^3 of 70% Sn concentrate at a cut-off grade of 200 grams / m^3. (636 tonnes contained SnO_2)

OR

2,437032 m^3 at an average grade of 296.7 grams / m^3 of 70% Sn concentrate at a cut-off grade of 200 grams / m^3. (723 tonnes contained SnO_2)

In 2000 Mineral Holdings acquired title to the area as Exploration Licence 10/2000. In early 2001 Niugini Resources, on behalf of Mineral Holdings, conducted a preliminary assessment of the Project being mindful of the changes in mining techniques since the work of Amdex. Results indicated that Amdex, and earlier, BHP, had averaged grades top to bottom of drill holes including barren clay overburden and had at no stage attempted to calculate a resource based on only the higher grade basal intersections.

In June 2001 Mineral Holdings embarked on a 10 hole excavator pitting, bulk sampling and sample processing program aimed at checking the validity of previous work and establishing that the ore grades were contained in basal alluvial layers within the zones outlined by Amdex. Pitting centered on the most south westerly resource area, B Lens, established that the cassiterite is contained in a free running, sandy to gravely, and occasionally bouldery alluvial wash layer lying below a barren, clay rich horizon that extends from near surface. The alluvial profile rests immediately on a strongly decomposed granitic basement.

Recent test work indicates that in addition to cassiterite the resource also contains recoverable quantities of zircon, rutile, ilmenite and monazite. While the Amdex resource figures are still quite valid a recalculation at the same cut-of grades but excluding the barren clay horizon can be quoted as:

Indicated Mineral Resource – A, B & E Lens

(At 200 gm/BCM grade cut-off)

556,751 bank cubic metres (BCM) at an average grade of

1.220 kg/BCM of 70% Sn concentrate

(679 tonnes of 70% Sn concentrate)

and an estimated

19 grams/BCM of Zircon as ZrO_2.

And

48 grams/BCM of Rutile and Ilmenite as TiO_2

The cassiterite grades used above were derived from the Amdex report and were taken to be "Bank" cubic metres. Titanium and zircon analyses are estimates taken from recent bulk sample results and are also converted to "Bank" cubic metre grades.

This recalculation would indicate that by using modern strip mining techniques, including overburden removal and environmental reclamation the resource could be mined in a shorter period for the same capital outlay but with a far shorter break even period and higher overall profitability.

In addition to this resource the deposit also includes:

Indicated Mineral Resource – D Lens

(At 100 gm/BCM grade cut-off)

59,100 bank cubic metres (BCM) at an average grade of

139 grams/BCM of 70% Sn concentrate

(8.2 tonnes of 70% Sn concentrate)

and an estimated

19 grams/BCM of Zircon as ZrO_2.

and

48 grams/BCM of Rutile and Ilmenite as TiO_2

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SECTION A

GEOLOGICAL ASSESSMENT

1.0 INTRODUCTION

The Monarch Project area is located in the north western section of the extensive Ringarooma River alluvial tinfield, a mineralised province that has historically produced in excess of 40,000 tonnes of tin from operations varying from small scale hand mining through to large scale dredging.

Unlike many of the other deposits in the region that are located in older, high level, Tertiary leads or in recent Quaternary alluvial stream deposits the Monarch alluvial deposits are apparently locally derived from the South Mt Cameron granite massif. The resource is contained within north-west trending, elongated apparently lens shaped deposits that closely parallel the recent drainage pattern. See Figures 5 and 6.

The principal cassiterite deposits are concentrated in a thin basal alluvial horizon resting immediately on bedrock. The deposit consists of coarse, granite-derived sands with a high felspathic component, and erratically distributed throughout these deposits gravel, pebble, cobble and boulder size fragments derived from granite and metamorphic sources, some ferruginous cement has been observed. There is strong evidence of a marine transgressive event having influenced deposition in the south-western section of the deposit, at that location the alluvial profile deepens rapidly and the alluvium is noted to contain marine shells and abundant pyritic material. The basal mineralised zone is in turn overlain by a granite-derived horizon consisting of clayey sands and sandy clays.

While the bulk of the cassiterite is relatively fine grained, < 1.0 mm, reconnaissance sampling in the east of the resource area located some cassiterite of a more coarse nature including angular cassiterite locked in quartz fragments. In addition to cassiterite the deposits contain zircon, monazite, ilmenite with minor rutile and corundum. The abundance of these accessory minerals varies dependant on the position in the deposits in relation to both gradient and source.

Reconnaissance conducted during June 2001 indicates that the resource blocks are open to the south and east toward the main slopes of Mt Cameron and that a further alluvial zone may be located east of the three areas delineated on the accompanying plans.

2.0 LOCATION AND ACCESS

The project area is located in north-eastern Tasmania approximately 83 kilometres northeast of the northern City of Launceston. More specifically the project is located on the north-western slopes of Mt Cameron approximately 8 kilometres due west of the township of Gladstone and on the headwaters of Vicary Creek, a major east bank tributary of the Boobyalla River. See Figure 1.

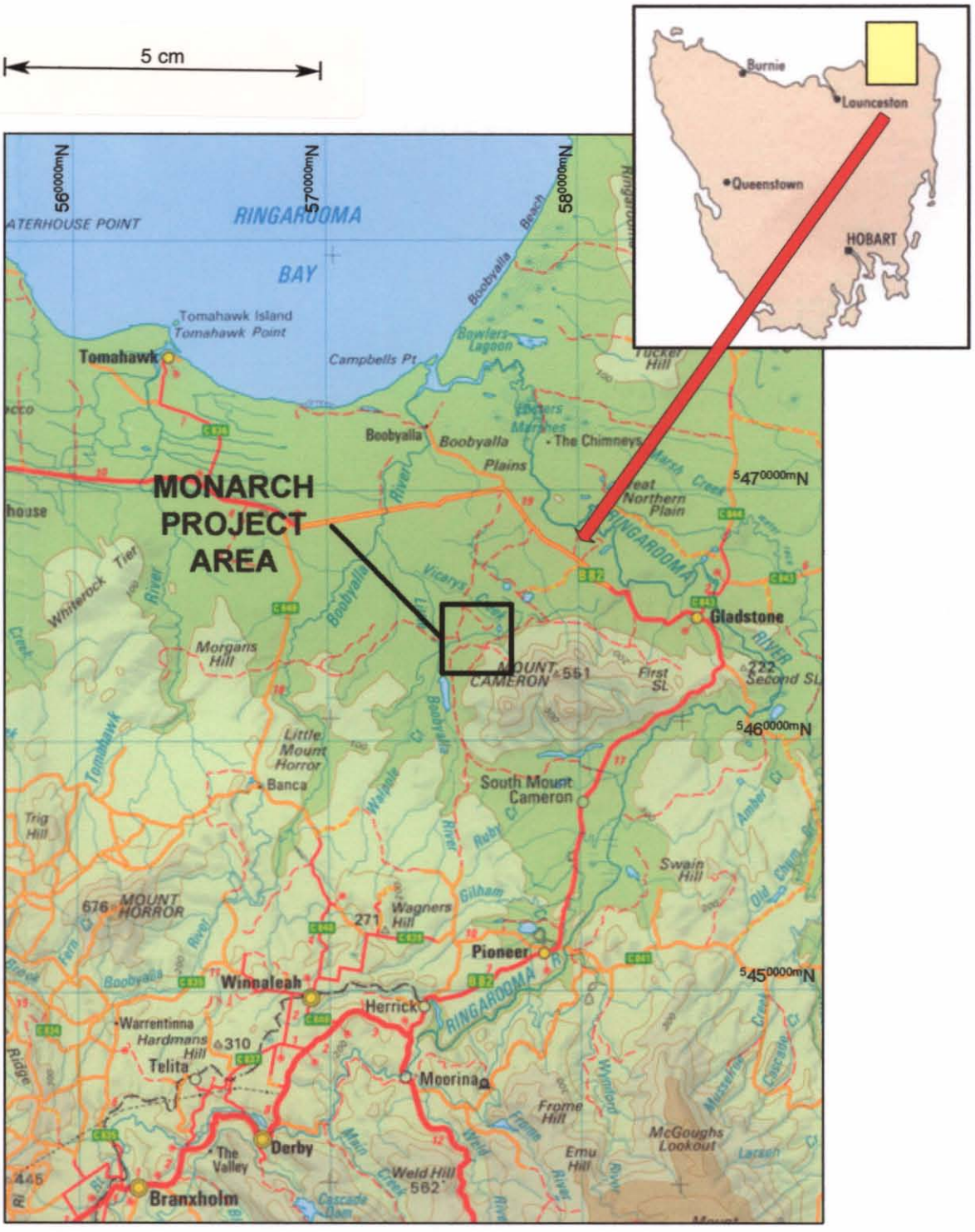
Access to the area is excellent. All weather roads provide vehicular access from Launceston. The northern link via the towns of Bridport and Tomahawk, the southern link via Scottsdale, Branxholm, Derby, Pioneer and Gladstone. In recent years upgrading of these roads has reduced the incidence of road closures due to flooding although extremely wet weather may cause local access difficulties around the Project site. Bulldozed and graded sandy gravel bush tracks provide access throughout the Project area.

3.0 TOPOGRAPHY AND CLIMATE

The project area occupies a relatively flat basin like depression immediately adjacent to the north and north-western slopes of Mt Cameron at elevations of around 50 metres above sea level (ASL). From the southern boundary of the project area the topography rises sharply to the peak of Mt Cameron at an elevation of 551 metres ASL. To the north the basin is bounded by a low ridge of granitic and Tertiary alluvial rocks that rise some 25 metres above the basin floor. See Figures 3 and 4.

The drainage is dominantly north-west, Shallamar and Vicary Creeks flowing into the Little Boobyalla and subsequently the Boobyalla River and thence to Ringarooma Bay. The north-western section of the Project area along Vicarys Creek is a dominantly swampy region.

Climate is typically temperate maritime with four seasons and moderate temperatures. Locally winter is the coldest and wettest period. Daily winter temperatures (June to October) range from below $0^{o}C$ to maximums in the 15 to $20^{o}C$ range and in summer (November to February) from $15^{o}C$ up to $30^{o}C$. Average annual rainfall varies from 890 mm to 1020 mm.



0 5 10 km

SCALE

FIGURE 1

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

TITLE

E.L 10 / 2000 - MONARCH PROJECT
LOCATION PLAN

FILENAME	DRAWN BY	DATE
FIGURE 1.VSD	*Niugini Resources P/L*	03/09/2001
SCALE	PAGE	REVISED
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4.0 TENURE

The project area is currently encompassed by a 4 sq. km Exploration Licence, EL 10 / 2000. Specifically:

Tenement Number	10 / 2000
Area	4 square km.
Location	Mount Cameron
Date of Grant	03 / 01 / 2000
Date of Expiry	08 / 12 / 2005

Beneficial Holder	Mineral Holdings Australia Pty., Limited. 10th Floor 100 Collins Street, MELBOURNE, Vic 3000.
Contact	Mr. Neil Thomas. Managing Director
Contact Point	Phone: +61 3 9654 7999 Fax: +61 3 9650 3855 Email: tominex@bigpond .com

5 cm

0 500 1000 m

SCALE

FIGURE 2

N

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED		
TITLE E.L 10 / 2000 - MONARCH PROJECT AIRPHOTO IMAGE OF THE PROJECT AREA		
FILENAME FIGURE 2.VSD	DRAWN BY *Niugini Resources P/L*	DATE 03/09/2001
SCALE 1:25,000	PAGE 1 OF 1	REVISED 16/09/2001

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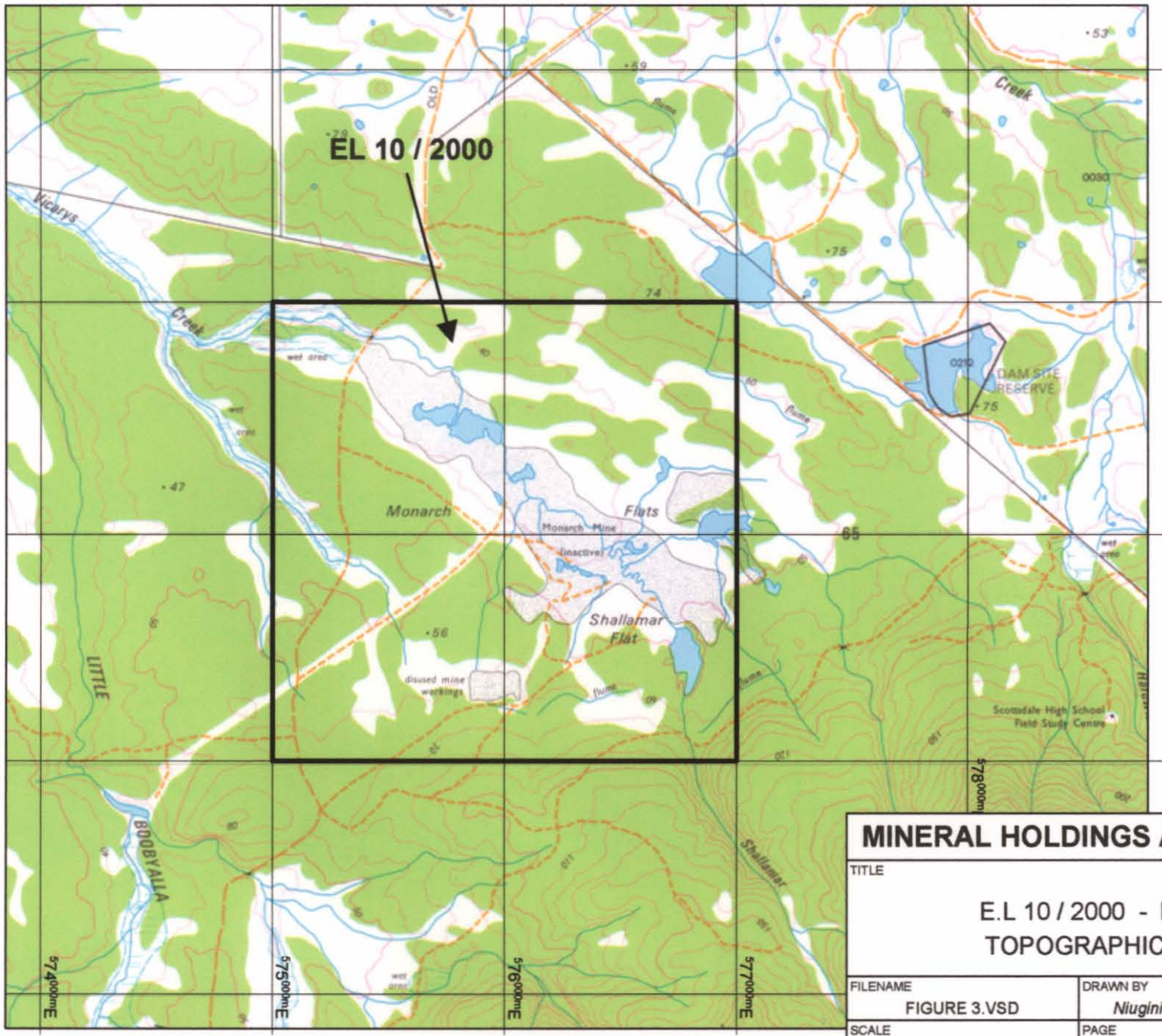

FIGURE 3

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

TITLE

E.L 10 / 2000 - MONARCH PROJECT
TOPOGRAPHIC AND TENURE PLAN

FILENAME	DRAWN BY	DATE
FIGURE 3.VSD	*Niugini Resources P/L*	25/07/2001
SCALE	PAGE	REVISED
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5.0 HISTORICAL BACKGROUND

Tin was probably first discovered in the Monarch area in the late 1800's and most initial works were carried out by Chinese miners. During the early 1900's it is likely that the Chinese miners were replaced by locally based small scale mining activities.

In 1922 the Monarch Tin Mining Company was formed and the first recorded production appeared the following year in the Report of the Secretary for Mines, Tasmania. During the period from 1922 to 1936 the company produced some 71.5 tonnes of cassiterite concentrates, specifically:

YEAR	TONS OF METAL Contained in Concentrate
1923	8.99
1924	21.05
1925	6.31
1928	21.21
1929	8.8
1934	2.3
1935	2.85
TOTAL	71.51 TONS OF TIN CONCENTRATES

The Monarch company appears to have conducted some scout drilling during this period and were responsible for the large area of workings now seen in the south end of the E.L.

Following the closure of the Monarch company's operations the area was worked intermittently by tributors and local miners until the early 1960's at which time the area was secured as Special Prospecting Licence 339 by Mr. V. Woods of Pioneer. Woods carried out some scout drilling during the summer of 1963.

In 1964 BHP took an option on the area from Woods but abandoned the arrangement in the following year after carrying out geological and geophysical surveys and a drilling program. BHP calculated the Monarch reserves as being 2,909,300 cubic yards at a grade of 5.8 oz / cubic yard of 70% SnO_2 concentrate.

In late 1965 a similar option was secured by Austminex Pty., Ltd., who after a short drilling program also abandoned the arrangement.

In March 1966 Kathleen Investments (Aust) Limited secured an option arrangement with Woods the arrangement being a free option for one year followed by a twelve month extension for $2,000.00 and a purchase exercise price of $40,000.00. In 1966 the company carried out a limited testing program in the Bonser Creek area, they did not extend for the second year of the option.

The Endurance Tin Mining Company purchased the Monarch area from Woods in September 1968. At that time Woods was appointed as Production Manager for the Endurance operation. In December of the same year Endurance commenced the construction of a water supply dam and production commenced at Monarch prior to the purchase of the operation by B.M.I in early 1970. The Endurance operation involved hydraulic monitoring of the alluvium and gravel pumping to a set of sluice boxes with jigs. Subsequently the operation utilised scrapers and bulldozers and finally a dragline.

As mining progressed B.M.I carried out an extensive program of auger drilling. The results of that program were used as mining controls, however due to poor implementation, it is almost certain that this resulted in some payable ground being overlooked. B.M.I ceased operations at Monarch in 1973.

In the late 1970s and early 1980's, the area was taken up by Amdex Mining Limited, both as an exploration licence and as individual mining leases. Amdex undertook limited test work and recalculated the resources deleting the ground previously worked by Endurance and B.M.I.

Since the work by Amdex there appears to have been little further exploration and the area remained vacant until secured by Mineral Holdings in 2000.

6.0 GEOLOGICAL SETTING

The dominant geological units in the area are the tin bearing granites of the Mt Cameron massif. The tin bearing alluvials of the Monarch project have been derived by erosion of these granites and subsequent concentration of the cassiterite in the stream systems shedding the massif.

During Tertiary times the area was subjected to significant rises in sea level and as a result some of the Monarch alluvial deposits were influenced by marine environment that is reflected by the presence of shelly material in some of the more westerly drill holes.

6.1 REGIONAL GEOLOGY

Basement within the tenement area is dominated by a suite of Palaeozoic acid igneous intrusives and metasediments. The cassiterite bearing alluvial deposits developed on these older units are of Tertiary age. See Figure 4.

i PALAEOZOIC

a) DEVONIAN – CARBONIFEROUS INTRUSIVES

The Mt Cameron massif that bounds the tenement to the south consists of a sequence of acid igneous rocks; porphyritic, coarse grained biotite and biotite / muscovite granites and adamellites. Clasts observed in the Tertiary alluvial profile indicate that cassiterite mineralization derived from these rocks probably originated from quartz veins and quartz rich greisen bodies.

b) MATHINNA BEDS

Metasediments of Ordovician to Devonian age are located to the north and south-west of the tenement. Locally they exhibit contact metamorphic effects and include psammites, spotted pelitic rocks and schists.

ii CAINOZOIC

a) TERTIARY ALLUVIALS

Previous workers have grouped the Monarch alluvials into the Tertiary and while this may be true there is strong evidence to suggest that at least some of the deposits at the Monarch are of more recent origin, that is of Quaternary age. Drilling indicates a massive thickening of the sequence to the west towards Boobyalla River.

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QUATERNARY — Quaternary

TERTIARY — Undifferentiated

ORDOVICIAN TO SILURIAN — Mathinna Beds

DEVONIAN - CARBONIFEROUS — Granitic Intrusives

5 cm

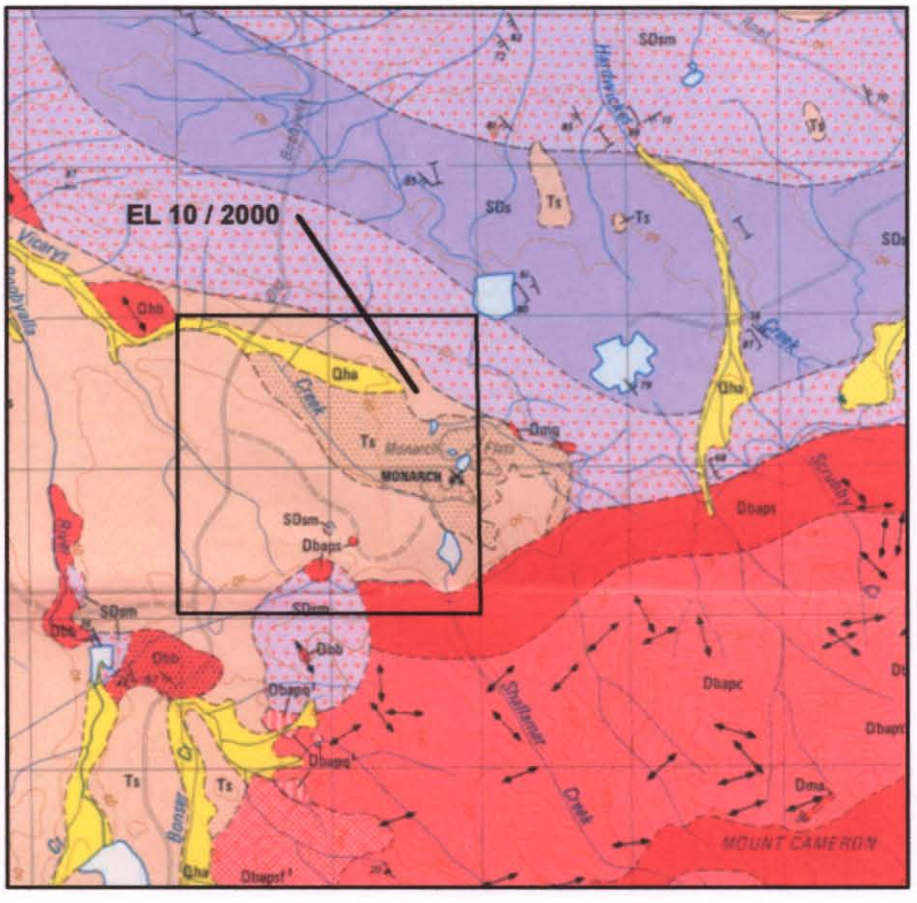

FIGURE 4

N

0 1000 2000 m

SCALE

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TITLE

E.L 10 / 2000 - MONARCH PROJECT
REGIONAL GEOLOGICAL PLAN

FILENAME	DRAWN BY	DATE
FIGURE 4.VSD	*Niugini Resources P/L*	03/09/2001
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There has been no definitive work aimed at subdividing the various alluvial sequences however the presence of marine fossils in the deeper sequences to the west appears to indicate some marine transgressive influence.

6.2 GEOLOGY OF THE PROJECT AREA

The focus of exploration has been a cassiterite bearing alluvial sequence located in a shallow basin lying north of Mt Cameron and flanked to the north by a long ridge of Mathinna Beds metasediments.

The sequence is highly variable from shallow "lag" type deposits along the slopes of Mt Cameron to thick marine reworked sediments along Vicary Creek in the west towards the Boobyalla River. In the area tested in 2001 the sequence exposed consisted of:

- 0 to 0.5 metres of black sandy and humic topsoil;
- 1.0 to 4.7 metres of yellowish to brown clayey sands and sandy clays with minor heavy minerals;
- 0.5 to 1.5 metres of reddish brown cobbly and bouldery sands, some ferruginous hardpan layers, this portion contains the bulk of the heavy minerals.

The general impression gained is that the cassiterite bearing deposits occur as stream alluvials developed along and generally parallel to the modern drainage system. The deep marine reworked ground that occurs along Lines 13 to 19 might, however, suggest that the lens like cassiterite bearing bodies in fact represent marine strand line deposits. There appears to be little lithologic correlation between holes from the old drilling programs and thus any definitive conclusions as to origin of the deposits are difficult to arrive at with any certainty.

The deposits are open to the south-east and it appears likely that the cassiterite bearing bodies extend outside the current resource boundaries.

SECTION B

RESOURCE STATEMENT

1.0 DATA ASSESSMENT

In preparing this Resource Statement as much of the previous exploration data as was available from both within the files of Mineral Holdings and on Open File at the Department of Minerals and Energy, Tasmania was accumulated and assessed.

1.1 PREVIOUS EXPLORATION DATA

Early exploration drill results of the Monarch Company and Mr. V. Woods were not available and could not be located on "Open File". It is likely however that at least some of the results may be available from Woods himself. How reliable those results would be in terms of the resource area remaining, is conjectural, and it is likely that the bulk of the ground drilled by those groups has already been mined.

The most reliable data package appears to be the work by BHP that was reported by W.S. Chesnut in June 1965. BHP presented this data as several Volumes and except for detailed assay sections of the drill holes those data were available and used in the preparation of this report. There are however some inconsistencies in the graphical representation and tabulated data, in particularly as some of the averages depicted on section do not correspond to those tabulated. This appears to have a lot to do with the process of averaging the grades top to bottom of the holes. For example:

HOLE 19G4H

GRAPHICAL SECTION RECORDS

0 to 7'	0.92 oz/y^3
7' to 12.5'	0.63 oz/y^3
12.5' to 16.7'	23.23 oz/y^3
Hole Averaged	6.44 oz/y^3

TABULATION

14' to 14.7'	117.0 oz/y^3

Clearly there were more detailed assay logs available of the BHP data that indicated further breakdowns of the sample intersections.

The BMI auger drill data were not available. Following discussions with a number of individuals involved at the time of that drilling it would appear to have provided erratic and conflicting data that was not subsequently confirmed by active production mining. It should be noted that Amdex reviewed those data prior to a recalculation of the resource and in noting these inconsistencies decided to exclude those data from consideration.

The most recent and definitive work is that by Amdex in 1970. That group completely recalculated the resource converting all previous "Imperial "measurements to "Metric" and plotted boundaries of all worked ground. Amdex also calculated grades "Top to Bottom" of the drill holes probably because current mining practice at the time was to treat the resource "Top to Bottom" using a dragline.

In recalculating the resource Amdex used two different cut-off grades, one set at 100 gm / m^3 and the other 200 gm / m^3. There is no annotation in the Amdex data to say if volumes quoted as cubic metres are "Bank" or "Loose", it has been assumed that the figures they quote are grades and volumes in "Bank" cubic metres.

1.2 RECENT BULK TESTING PROGRAM

In June 2001 Mineral Holdings undertook a program of pitting, bulk sampling and sample treatment at the Monarch Project. Ten pits were excavated in "B Lens" using a CAT 350 excavator with 1.8 m^3 bucket, samples trucked to stockpile and subsequently processed through a 2 m^3 / hour Max-I-Weld mobile test unit. Sampling was specifically aimed at confirming the presence of the resource lens, its contained grades and the lithologic profile. In addition to bulk samples each prospective wash horizon was channel sampled and hand dished to a concentrate.

The treatment plant flowsheet is depicted in Figure 7. Because the clayey contamination from over-sampling of the clay overburden layers created abundant clay balls in the trommel oversize that material was collected in a wheelbarrow, puddled and returned to the feed bin for re-treatment. A sample was collected of any clay balls remaining after completion of processing. Dishing of the trommel residues was carried out during all stages of the processing. Concentrates were collected as:

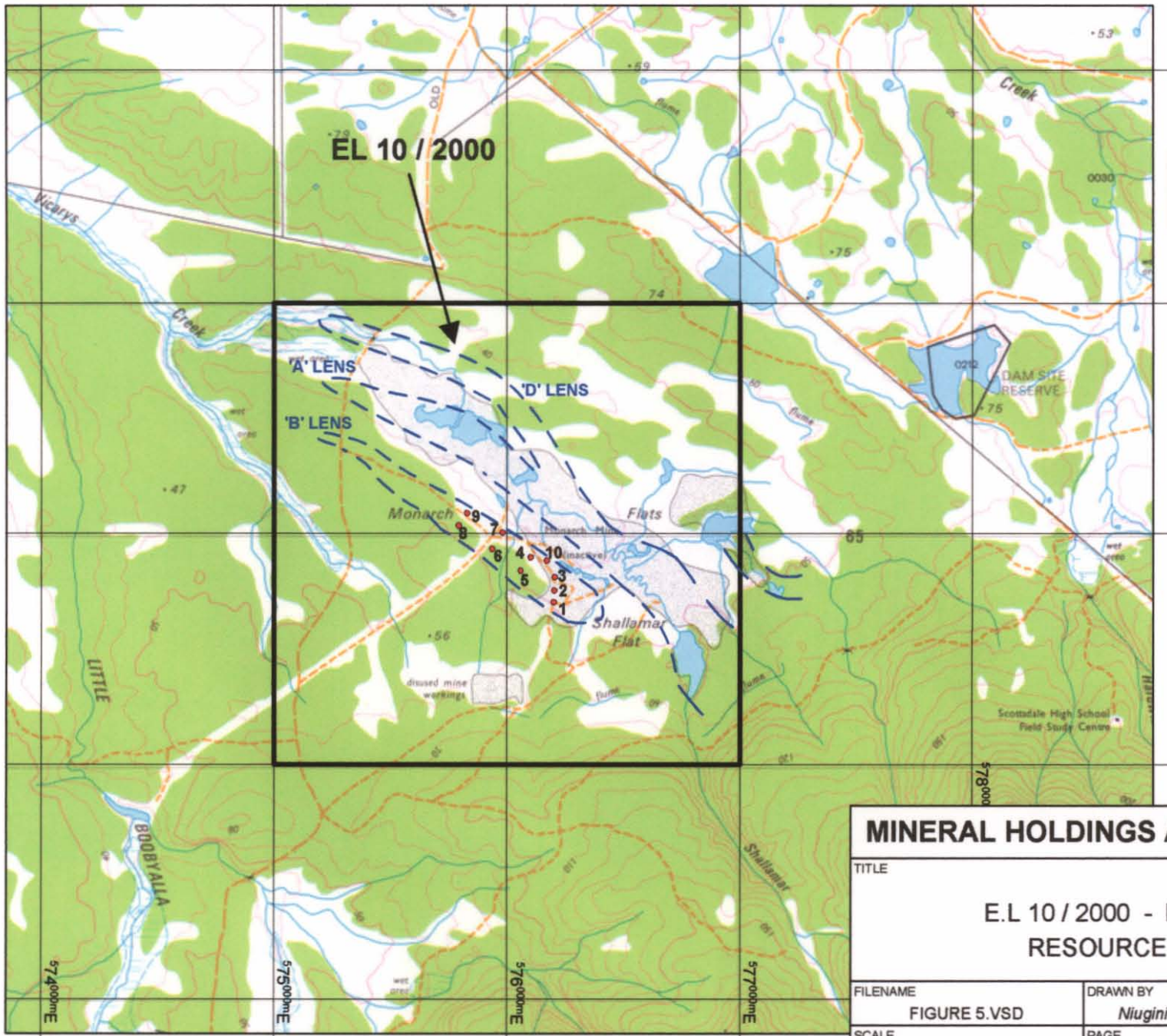
- Jig underflow (spigot and sluice products); and
- Jig screen product from which ragging had been magnetically removed.

The jig discharge tailings were checked for any significant tin losses.

The channel samples were dished to a concentrate and submitted for Sn analyses.

Specific details of the various stages of the program are:

- Reconnaissance and location of previous drill holes, pegging of test pit locations.
- Pitting
  - Removal of surface soils and vegetation to a discrete stockpile;
  - Progressive excavation of the hole to basement, logging of the profile;



5 cm

Resource Boundary

Bulk Test Pit 1

0 0.5 1.0 km

N

FIGURE 5

- B2A -

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

TITLE

E.L 10 / 2000 - MONARCH PROJECT
RESOURCE LOCATION PLAN

FILENAME	DRAWN BY	DATE
FIGURE 5.VSD	*Niugini Resources P/L*	25/07/2001
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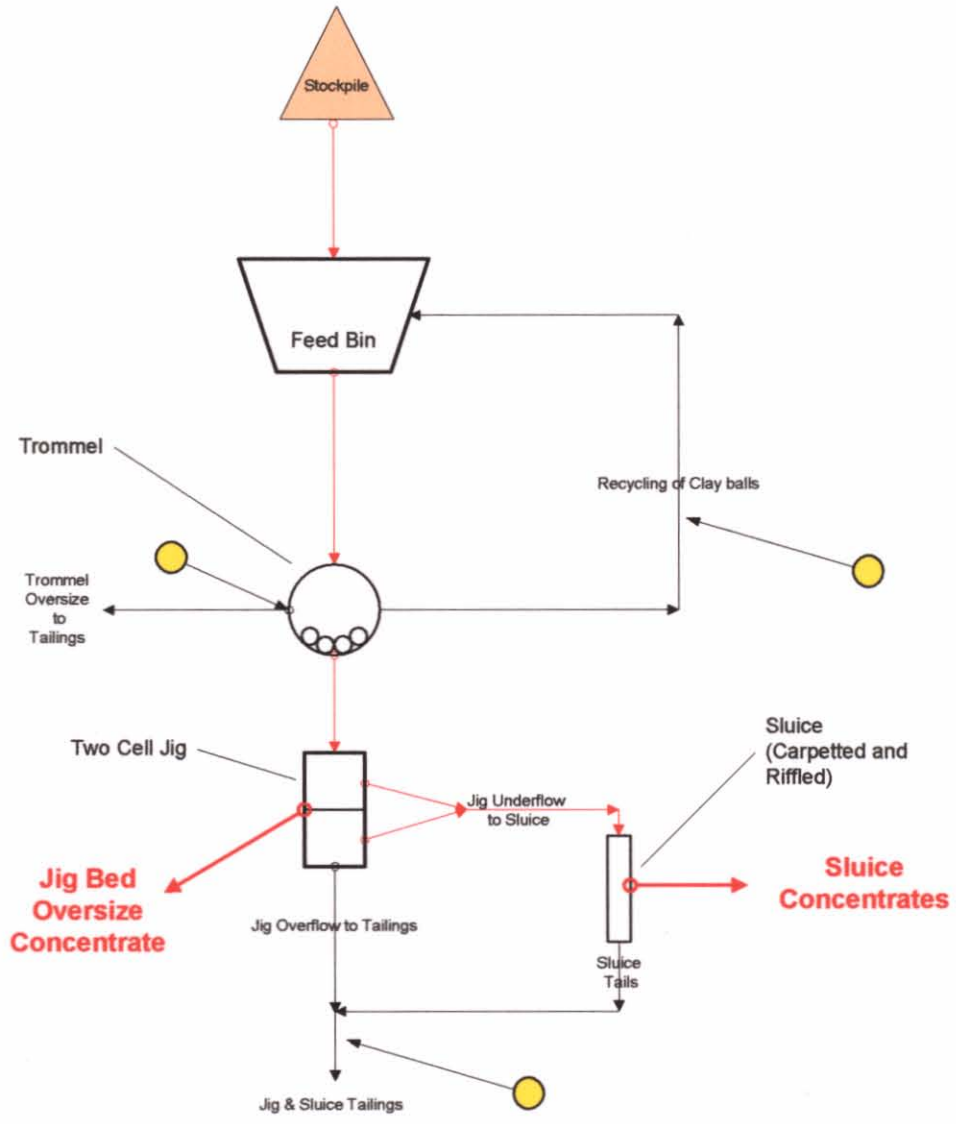

FIGURE 7

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED		
TITLE MONARCH PROJECT BULK TESTING SAMPLE TREATMENT FLOWSHEET		
FILENAME *Monarch*	DRAWN BY *Niugini Resources P/L*	DATE *04/09/2001*
SCALE *No Scale*	PAGE 1 OF 1	REVISED *06/09/2001*

- Stripping of a section of overburden to the top of the wash horizon and then removal of approximately 1.8 m^3 of the cassiterite bearing alluvial wash to truck;
- Channel sample of the alluvial wash horizon; and
- Restoration of the pit by backfilling, compaction and return of topsoil.

- Sample Treatment
  - Check measurement and calculation of individual sample volumes;
  - Lithologic check of the sample;
  - Processing through the treatment plant and collection of concentrates;
  - Hand dishing of channel samples.

- Sample Cleanup
  - Concentrates were collected by Lawry Rhodes, Consultant Metallurgist and processed to produce a variety of concentrates as depicted on Figure 8.

- Presentation of Results
  - Results are presented in several forms, specifically as:
    - Pictorial lithologic logs; and
    - Excel spreadsheet format assay result sheets.

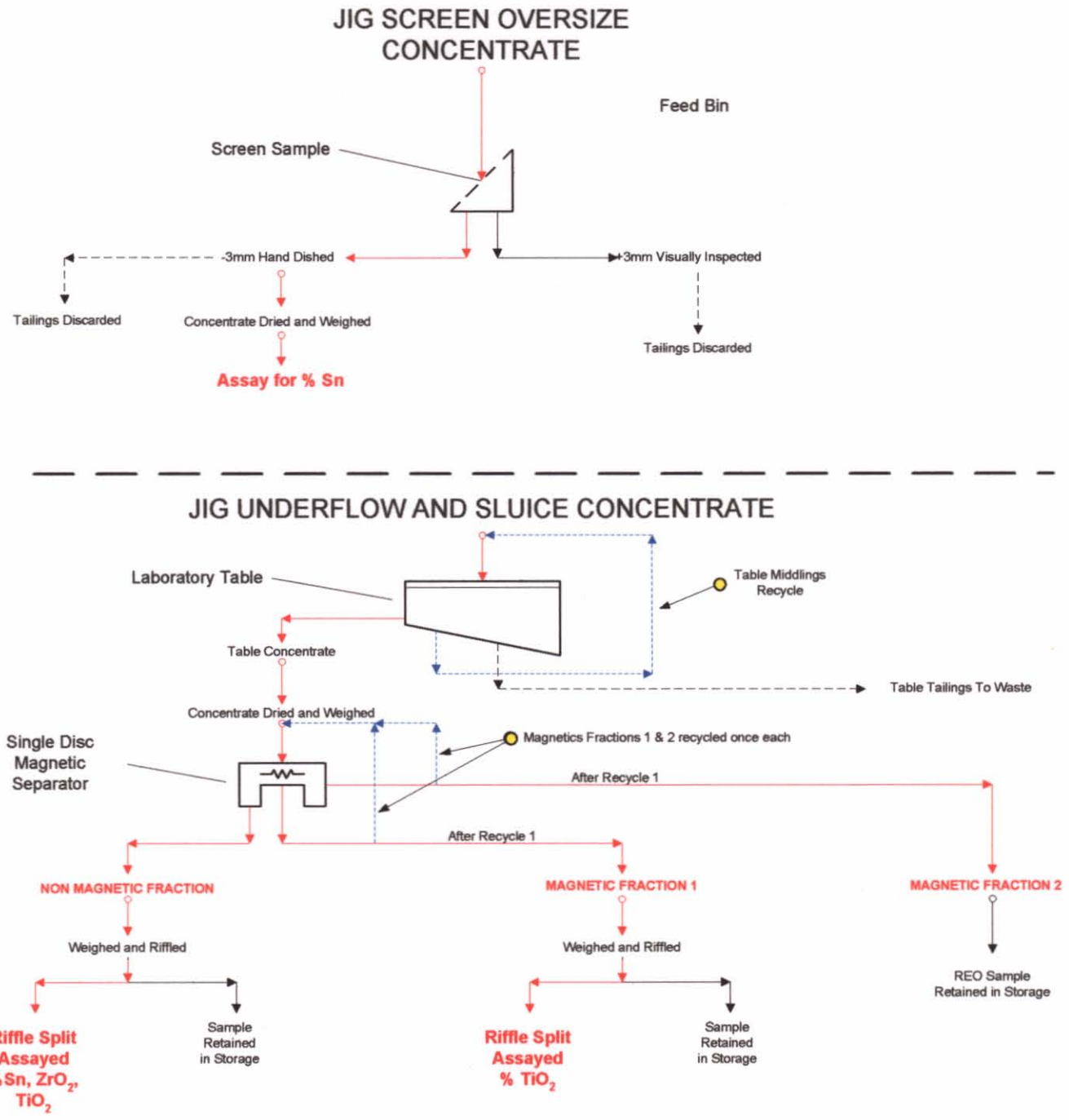

FIGURE 8

Product and Concentrate Trail

Tailings Trail

Recycling Flow

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

TITLE

MONARCH PROJECT
CONCENTRATE PROCESSING FLOWSHEET

FILENAME	DRAWN BY	DATE
Monarch	*Niugini Resources P/L*	*04/09/2001*
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No Scale	1 OF 1	*06/09/2001*

2.0 RESOURCE PARAMETERS

The following section is included to provide the reader with the methodology and parameters used in calculation of the resource quoted later in this text.

2.1 GRADE CALCULATION

It should be noted that the cassiterite grades derived from recent test work were not used in the recalculation of the resource since they only applied to a small area and there were major inconsistencies in grades reported between "Bulk" and "Channel" samples. Some assumptions were made in relation to the zircon and titanium analyses derived from the recent work.

Average grades for each lens were calculated by weighing the area of influence of each hole against grade. The overall average grade for the resource was calculated by weighted averaging of the volumes and grade for each of the defined lens areas.

2.1.1 CASSITERITE

i BHP Data Set

The BHP tabulated logs were reviewed and the grades converted from "Imperial" to "Metric" using the following conversions:

1 foot = 0.3048 metres

1 oz / y^3 = 37.07978 gm / m^3

A cut-off grade of 200 gm / m^3 was applied and those grades appearing highlighted in yellow in Appendix I were used to calculate average resource grades.

ii Recent Test Results

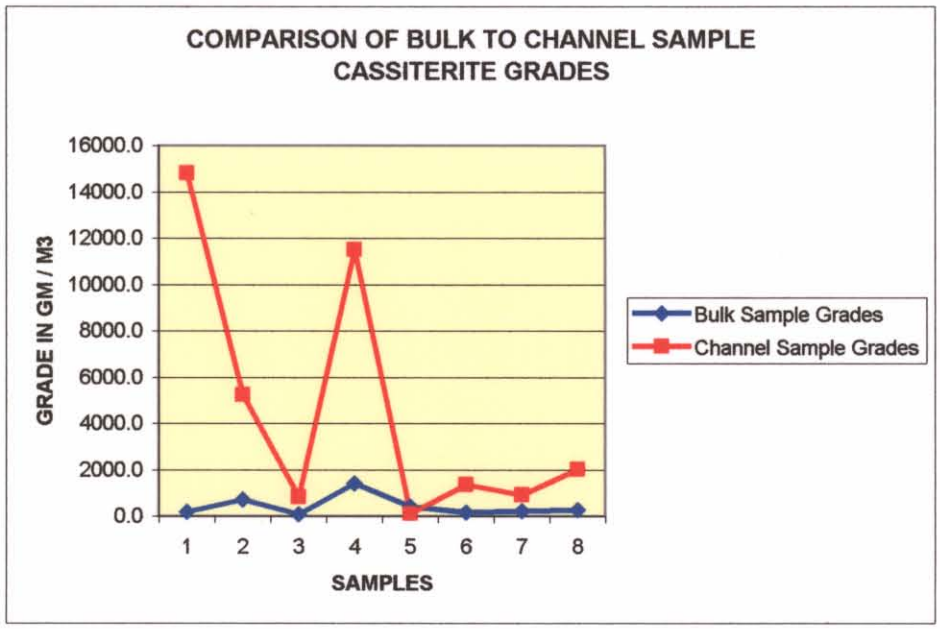
Following tabling and magnetic separation of the jig underflow products the concentrates were weighed and then "wet" analysed for % Sn. These results and the results for channel samples were converted to grams / loose cubic metre (LCM) of 70% Sn concentrate. This calculation assumed the following:

Sn to SnO_2 factor = 1.27X

SnO_2 taken to be 78.6% Sn

At the time of preparation of this report the jig screen products (material recovered from on top of the jig screens) had not been processed for any of the samples except M101. Sample M101 reports all tin recovered from the sample. Discussions with Lawry Rhodes indicate that preliminary processing of samples has yielded an additional 50 grams of 70% Sn concentrate per sample. This additional cassiterite component will not materially alter the grades, for example M102 would show an increase in grade from 201 to 207 gm/LCM.

There are major discrepancies between the cassiterite results reported from the bulk and the channel samples. The following graphical representation illustrates those differences.



The discrepancies between the results are considered to be due to major dilution of the cassiterite bearing wash by clay overburden. It proved extremely difficult with the 35 tonne machine to selectively extract the wetter sandy wash from underneath the more competent clay rich horizon. Channel sampling in this instance it considered to represent more accurately the grade of the cassiterite bearing horizon. Note should be taken however that in wet ground even channel sampling has deficiencies.

2.1.2 ZIRCON

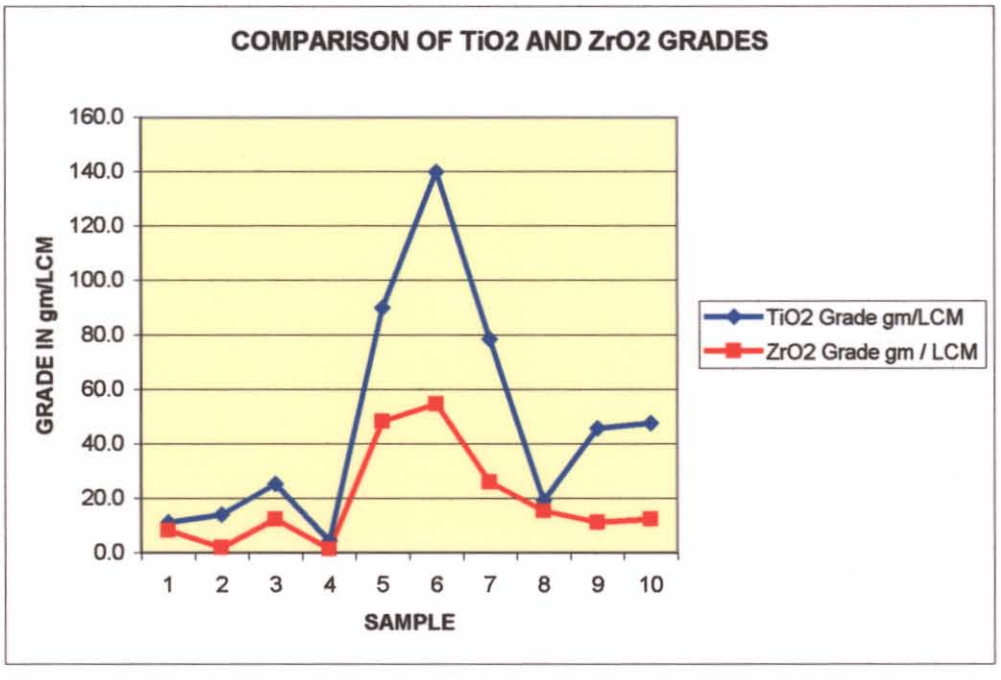
Zircon analyses were conducted on the non-magnetic fraction of the tabled jig underflow product and results were reported as ZrO_2. Mag 1 and Mag 2 concentrate products were visually inspected using a microscope and no significant zircon was noted in either fraction.

5 cm

Results were converted from % $Zr0_2$ to grams / LCM of $Zr0_2$. Minor coarse zircon can be expected to report to the jig screen product however the quantity is so small as to make no impact on the grades reported here.

2.1.3 RUTILE AND ILMENITE

Both the Non Magnetics and Mag 1 fractions of the jig underflow concentrates were analysed for TiO_2. Results were converted to grams/LCM of TiO_2. Preliminary inspection indicates that there are only minor quantities of ilmenite and no rutile in the jig screen products. The LCM grades were converted to Bank Cubic metres using a 25% expansion factor.



2.1.4 MONAZITE AND RARE EARTHS

Monazite and / or xenotime report to the Mag 2 fraction of the jig underflow concentrates. These were not analysed, concentrates have been retained for later analysis if required.

5 cm

2.2 VOLUME CALCULATIONS

Volumes were calculated using the BHP grade intersections and by direct measurement from the plot of those data that appear here as Figure 6. Areas shown by Amdel as having been mined were deleted from the resource volume.

Average ore zone thicknesses were calculated from the BHP data and applied to the four resource lens areas, see Appendix I. Some alterations were made to the outline of the various resource areas in line with re-calculation of grades and application of a 200 grams / m^3 cut-off grade. Areas of influence for each drill hole were determined by use of a digital planimeter.

2.3 RESOURCE EXTENSIONS

An inspection of the data would appear to indicate that the resource area is open to the south east, specifically:

A LENS: The original outline provided by Amdel appears to indicate a swing southward to the old Monarch Company workings. The recalculation of the grades appears to indicate that in fact the resource broadens as indicated by the red outline and in fact trends toward Line 27 (Holes H27, 27G8H and 27G12H). Holes H27 and 27G12H were not sampled.

B LENS: There is evidence to suggest that the lens narrows to the south-east but continues as a more narrow zone towards the workings near Hole J23. A field inspection in the area has located extensive shallow workings to the south of J23.

D LENS: Recalculation of grade indicates that D lens is in fact a lower grade section occurring as an offshoot of A lens.

E LENS: There is strong evidence to suggest that E lens extends further to the east than shown on the accompanying plan and may turn to the south-east along the east bank of Vicary Creek. Further field inspections in this area are required.

3.0 RESOURCE STATEMENT

As a result of the re-assessment of all available data and the confirmation by recent bulk testing of the location and general tenor of the previously defined resource the following is considered to be the resource currently defined at the Monarch Project area.

The term "Resource" is preferred at this time as there has to date been no effort to apply economic parameters to the deposit, that is, matters of economic viability including detailed feasibility studies. The current classification taken from the Australasian Code for the Reporting of Mineral Resources and Ore Reserves (The JORC Code) has been used in this instance.

"Indicated Mineral Resource" – is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and / or grade continuity but are spaced closely enough for continuity to be assumed.

Contained within A, B and E Lens

An Indicated Mineral Resource
(At 200 gm/BCM grade cut-off)

556,751 bank cubic metres (BCM) at an average grade of
1.220 kg/BCM of 70% Sn concentrate
(679 tonnes of 70% Sn concentrate)

and also containing an estimated but unconfirmed accessory content of

19 grams/BCM of Zircon as ZrO_2.
and
48 grams/BCM of Rutile and Ilmenite as TiO_2

In addition to this resource there exists an additional but limited volume of cassiterite bearing alluvium within D lens, specifically:

Indicated Mineral Resource

(At 100 gm/BCM grade cut-off)

59,100 bank cubic metres (BCM) at an average grade of

139 grams/BCM of 70% Sn concentrate

(8.2 tonnes of 70% Sn concentrate)

and an estimated but unconfirmed accessory content of

19 grams/BCM of Zircon as ZrO_2.

and

48 grams/BCM of Rutile and Ilmenite as TiO_2

4.0 CONCLUSIONS

As a result of the recent bulk sampling and a re-assessment of previous exploration data it can be concluded that:

i Recent bulk sample work indicates that the cassiterite bearing basal alluvial layer is overlain by a virtually cassiterite deficient sandy clay and clayey sand. Overburden : Ore Ratios are in the order of 3.5:1.

ii Recent pitting and bulk sampling confirm the general outline and tenor of the resource previously defined by BHP and Amdel.

iii By removal of the overburden layer from grade calculations it is possible, at a 200 gram / m^3 cut-off, to increase average grades from that reported by Amdel of 353 grams/m^3 to 1,220 grams/m^3, a three fold increase.

iv In addition to cassiterite the recent sampling also indicates an accessory heavy mineral component consisting of rutile, ilmenite, zircon and rare earth minerals (monazite). Limited information allows only estimated grades to be quoted.

v The resource is open to the south-east towards the lower slopes of Mt Cameron.

vi Re-assessment of the previous data and a recalculation of grade has resulted in some variations to the resource outline and increase in resource area.

vii The Project is now considered to encompass an:

Indicated Mineral Resource – A, B and E Lens

(At 200 gm/BCM grade cut-off)
556,721 bank cubic metres (BCM) at an average grade of
1.220 kg/BCM of 70% Sn concentrate
(679 tonnes of 70% Sn concentrate)

and also containing an estimated but unconfirmed accessory content of
19 grams/BCM of Zircon as ZrO_2 and 48 grams/BCM of Rutile and Ilmenite as TiO_2

and

Indicated Mineral Resource - D Lens

(At 100 gm/BCM grade cut-off)
59,100 bank cubic metres (BCM) at an average grade of
139 grams/BCM of 70% Sn concentrate
(8.2 tonnes of 70% Sn concentrate)

and an estimated but unconfirmed accessory content of
19 grams/BCM of Zircon as ZrO_2 and 48 grams/BCM of Rutile and Ilmenite as TiO_2

viii While these volumes are some three times lower than those reported previously the reassessment has resulted in a slight increase in contained Sn concentrates from 636 tonnes to 687 tonnes.

ix Further exploration around the southern and eastern boundaries of the resource can be expected to further increase the resource figures quoted above.

5.0 BIBLIOGRAPHY

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APPENDIX I - BHP DRILLING RESULTS (Metric Conversion)

868036

MONARCH DRILL RESULTS - METRIC

HOLE NO	INTERVAL			WASH INTERVAL			GRADE
	FROM m	TO m	DEPTH m	FROM m	TO m	DEPTH m	Sn gm / LCM
11E12F	0	4.1	4.1				
F11	0	1.8	1.8				
11F4G	0	0.9	0.9				
11F12G	0	8.5	8.5	8.5	16.8	8.3	5.56
G11	0	25.0	25.0				
11G4H	0	11.4	11.4	11.4	24.7	13.3	3.71
11G8H	0	13.7	13.7	13.7	29.7	16.0	1.48
11G12H	0	14.9	14.9	14.9	39.6	24.7	5.56
H11	0	15.4	15.4	15.4	40.5	25.1	3.71
11H4J	0	13.1	13.1	13.1	36.3	23.2	
11H8J	0	16.8	16.8	16.8	34.1	17.3	
11H12J	0	16.5	16.5	16.5	30.5	14.0	
J11	0	12.2	12.2				
13E12F	0	3.4	3.4				
F13	0	1.5	1.5				
13F4G	0	2.9	2.9				
13F8G	0	4.1	4.1	4.1	4.3	0.2	248.44
13F12G	0	12.5	12.5				
G13	0	15.8	15.8	15.8	26.5	10.7	
13G8H	0	11.6	11.6	11.6	30.2	18.6	
13G12H	0	13.4	13.4	13.4	23.5	10.1	
15D8E	0	3.5	3.5	3.5	3.7	0.2	144.61
15D12E	0	1.2	1.2	1.2	1.5	0.3	88.99
E15	0	0.8	0.8				
15E4F	0	2.4	2.4	2.4	2.7	0.3	144.24
15E8F	0	3.4	3.4	3.4	4.4	1.0	37.08
15E12F	0	2.7	2.7				
F15	0	2.7	2.7	2.7	3.8	1.1	1097.57
15F4G	0	13.7	13.7	13.7	14.3	0.6	57.47
15F8G	0	20.7	20.7	20.7	23.9	3.2	302.57
15F12G	0	24.4	24.4				
G15	0	2.7	2.7	2.7	3.0	0.3	22.62
				4.4	7.2	2.7	9.27
				22.4	23.9	1.5	36.34
15G4H	0	20.7	20.7	20.7	21.9	1.2	259.19
15G8H	0	6.6	6.6	6.6	7.1	0.5	652.24
15G12H	0	17.8	17.8	17.8	21.9	4.1	
H15	0	5.6	5.6	5.6	6.1	0.5	
				11.4	20.6	9.1	
15H4J	0	15.8	15.8	15.8	18.0	2.2	13.72
				19.1	23.2	4.1	
15H8J	0	6.71	6.71				
J15	0	4.27	4.27	4.27	4.79	1.70	
K15	0	0.46	0.46	0.46	2.51	2.05	
L15	0	1.68	1.68				

MONARCH DRILL RESULTS - METRIC

HOLE NO	INTERVAL			WASH INTERVAL			GRADE
	FROM m	TO m	DEPTH m	FROM m	TO m	DEPTH m	Sn gm / LCM
E17	0	0.76	0.76				
17E4F	0	1.98	1.98	1.98	2.74	0.76	142.39
F17	0	3.35	3.35	3.35	3.81	0.46	222.48
F17				6.25	8.23	1.98	741.60
17F4G	0	3.66	3.66	3.66	4.42	0.76	556.20
17F8G	0	3.96	3.96	3.96	6.10	2.14	129.78
17F12G	0	20.12	20.12	20.12	20.73	0.61	22.25
G17	0	5.18	5.18	5.18	8.23	3.05	778.68
17G4H	0	19.81	19.81	19.81	20.42	0.61	322.23
17G8H	0	22.25	22.25	22.25	22.56	0.31	
				29.87	30.48	0.61	
17G12H	0	19.81	19.81	19.81	20.12	0.31	
				22.86	23.16	0.30	
H17	0	19.35	19.35	19.35	22.10	2.75	
17H4J	0	15.24	15.24	15.24	16.76	1.52	7.79
17H8J	0	1.98	1.98				
17H12J	0	3.35	3.35	3.35	3.51	0.16	18.54
HJ17	0	2.59	2.59				
E19	0	3.66	3.66				
19E4F	0	3.05	3.05	3.05	3.66	0.61	
19E8F	0	0.61	0.61				
19E12F	0	1.83	1.83	1.83	3.05	1.22	135.71
F19	0	2.74	2.74	2.74	3.05	0.31	
F19				5.64	5.79	0.15	593.28
19F4G	0	4.27	4.27	4.27	4.57	0.30	370.80
19F8G	0	5.49	5.49	5.49	5.94	0.46	1668.60
19F12G	0	4.27	4.27				
G19	0	2.90	2.90				
19G4H	0	4.27	4.27	4.27	4.48	0.21	4338.36
19G8H	0	5.18	5.18	5.18	5.49	0.31	3559.68
19G12H	0	2.44	2.44				
H19	0	1.22	1.22				
19H4J	0	3.26	3.26				
19H8J	0	4.57	4.57	4.57	8.23	3.66	59.33
19H12J	0	2.59	2.59				
J19	0	5.49	5.49				
19J4K	0	1.52	1.52				
J19.5	0	0.31	0.31				
J20	0	1.22	1.22				
J20.5	0	0.61	0.61				
E21	0	2.44	2.44				
21E4F	0	3.05	3.05	3.05	3.20	0.15	
21E8F	0	2.74	2.74	2.74	3.05	0.31	
21E12F	0	2.59	2.59	2.59	2.90	0.31	
F21	0	0.61	0.61				
21F4G	0	4.57	4.57	4.57	4.88	0.31	111.98
21F8G	0	4.57	4.57	4.57	4.88	0.31	407.88
21F10G	0	0.98	0.98	0.98	1.25	0.27	315.18

MONARCH DRILL RESULTS - METRIC

HOLE NO	INTERVAL			WASH INTERVAL			GRADE
	FROM m	TO m	DEPTH m	FROM m	TO m	DEPTH m	Sn gm / LCM
21F12G	0.00	6.40	6.40	6.40	7.16	0.76	12458.88
21F14G	0.00	3.96	3.96	3.96	6.55	2.59	1423.87
G21	0.00	4.27	4.27	4.27	4.57	0.30	264.38
21G4H	0.00	2.74	2.74				
21G6H	0.00	3.96	3.96	3.96	4.11	0.15	222.48
21G8H	0.00	3.05	3.05	3.05	3.66	0.61	1520.28
21G10H	0.00	2.13	2.13	2.13	2.29	0.16	74.16
21G12H	0.00	4.27	4.27	4.27	4.88	0.61	5116.67
21G14H	0.00	4.27	4.27	4.27	4.57	0.30	10019.02
H21	0.00	4.42	4.42	4.42	4.88	0.46	990.04
21H2J	0.00	3.35	3.35				
21H4J				0.00	2.74	2.74	89.36
				2.74	3.66	0.92	22.25
21H6J	0.00	3.51	3.51	3.51	3.66	0.15	
21H8J	0.00	2.29	2.29				
J21	0.00	0.30	0.30				
21.5H8J	0.00	0.30	0.30				
22H8J	0.00	0.30	0.30				
22.5H8J	0.00	0.46	0.46				
23E4F	0.00	2.74	2.74				
23E8F	0.00	3.66	3.66	3.66	4.27	0.61	
23E12F	0.00	3.05	3.05	3.05	3.66	0.61	81.21
F23.5	0.00	5.18	5.18				
23F4G	0.00	1.52	1.52	1.52	2.44	0.92	
				3.73	4.27	0.53	
23F8G	0.00	3.20	3.20	3.20	5.49	2.29	62.29
23F12G	0.00	4.11	4.11	0.00	4.11	4.11	11.49
G23	0.00	4.88	4.88	4.88	5.49	0.61	1854.00
23G4H	0.00	5.49	5.49	5.49	5.94	0.45	444.96
23G8H	0.00	7.92	7.92	7.92	8.44	0.52	2447.28
23G12H	0.00	3.66	3.66	3.66	5.49	1.83	68.97
H23	0.00	4.57	4.57				
J23	0.00	1.07	1.07				
25E12F	0.00	7.01	7.01				
F25	0.00	5.94	5.94				
25F4G	0.00	3.81	3.81				
25F8G	0.00	4.42	4.42				
25F12G	0.00	6.40	6.40				
G25	0.00	6.40	6.40	6.40	6.61	0.21	139.42
25G4H	0.00	6.25	6.25	6.25	6.40	0.15	
				7.47	7.77	0.30	
25G8H	0.00	10.97	10.97	10.97	11.73	0.76	1093.86
25G12H	0.00	10.82	10.82	10.82	11.89	1.07	741.60
H25	0.00	10.21	10.21	10.21	10.82	0.61	964.08

MONARCH DRILL RESULTS - METRIC

HOLE NO	INTERVAL			WASH INTERVAL			GRADE
	FROM ft	TO ft	DEPTH ft	FROM ft	TO ft	DEPTH ft	Sn GM / M^3
27F8G	0.00	7.16	7.16	7.16	8.08	0.92	118.29
27F12G	0.00	7.83	7.83	7.83	7.92	0.09	
G27	0.00	8.08	8.08	8.08	8.99	0.91	1854.00
27G4H	0.00	3.66	3.66	3.66	4.42	0.76	1186.56
27G8H	0.00	1.98	1.98				
27G12H	0.00	0.30	0.30				
H27	0.00	0.30	0.30				

APPENDIX II - TEST PIT LOGS JUNE 2001

868041

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

ALLUVIAL LITHOLOGIC AND SAMPLING LOG

PROJECT: Monarch Project | **GEOLOGY:** D. Duncan | **DATE:** 4th June 2001

PIT NO	INTERSECTION FROM m	TO m	INT m	LITHOLOGY	LITHOLOGIC LOG	SAMPLE NUMBER	SAMPLE INTERVAL m	SAMPLE VOLUME LCM	SAMPLE DESCRIPTION
MCH PIT NO 1	0	3.0	3.0		Grey sandy clay	M 101A M 102	3.0 to 4.2 2.4 to 4.2	1.8 1.8	M 101A North end of the trench M 102 south end of trench
	3.0	4.2	1.2		Red, gritty was with occasional cobbles to 10 cm of mainly fg metasediment, quartzite and vein quartz				
	4.2			+	Oxidised granite basement				
MCH PIT NO 2	0	2.9	2.9		Grey, sandy wash	M 103	2.9 to 4.0	1.8	Brown wash.
	2.9	4.0	1.1		Brown wash, with rounded quartz and angular metasediemnt clasts to 7 cm				
	4.0			+	yellow oxidised granite basement				
MCH PIT NO 3	0	1.0	1.0		Sandy clay, with minimum wash	Not Sampled			
	1.0			+	Oxidised granite basement				
MCH PIT NO 4	1.0	2.8	2.8		Sandy clay	M 104	2.8 to 3.3	1.8	Grey, clayey wash; mainly fg sand with grit and occasional rounded clasts of white quartz; smaller black, glassy quartz, and metasediments, rounded cobbles to angular blocks to 20 cm, in very clay rich matrix; grit layers have a granitic texture with quartz and feldspar in sandy layers.
	2.8	3.3	0.5		Grey sandy wash layer with occasional pebbles				
	3.3	4.3	1.0		Sandy clay				
	4.3			+	Oxidised granite basement				
MCH PIT NO 5	0	4.0	4.0		Sandy clay, mottled, grey to light brown	M 105	4.0 to 5.0	1.8	Wash with cobbles
	4.0	5.0	1.0		Wash with cobbles to 10 cm; ferruginous, stained layers at top				
	5.0	0	0	+	Oxidised green granite basement				
MCH PIT NO 6	0	4.7	0		Sandy clay, hard pan on top then good, stiff clay	M 106 M 107	4.7 to 5.2 5.2 to 5.7	1.8 1.8	M 106 Wash is yellow granite grit with clay bands and occ. Quartz pebbles in a clay rich matrix M 107 brown, clay rich wash; sandy matrix in places with quartz granules, occ. Angular clasts of quartz and blocks of sandstone
	4.7	5.2	0.5		Yellow sandy wash with clay bands				
	5.2	5.7	0.5		Brown, ferruginous basal wash, with occasional cobbles				
	5.7			+	Brown oxidised granite basement				
MCH PIT NO 7	0	2.0	2.0		Sandy clay, with minimum wash	Not sampled			
	2.0			+	Brown oxidised granite basement				

5 cm

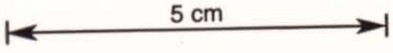
868042

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

ALLUVIAL LITHOLOGIC AND SAMPLING LOG

PROJECT: Monarch Project	**GEOLOGY:** D. Duncan	**DATE:** 4th June 2001

PIT NO	INTERSECTION FROM m	TO m	INT m	LITHOLOGY	LITHOLOGIC LOG	SAMPLE NUMBER	SAMPLE INTERVAL m	SAMPLE VOLUME LCM	SAMPLE DESCRIPTION
MCH PIT NO 8	0	1.4	1.4		Yellow sandy soil	M 108	4.6 to 5.1	1.8	Yellow brown layers of clay rich wash with some quartz granules alternate with bands of granite-derived grits and occ. Blocks of sandstone.
	1.4	3.4	2.0		Sandy clay				
	3.4	4.6	1.2		Grey to red, mottled, high plasticity clay (Clay sample M 108)				
	4.6	5.1	0.5		Yellow brown wash				
	5.1				yellow oxidised granite basement				
MCH PIT NO 9	0	1.0	1.0		Ferruginous, brown soil	M 109	4.0 to 5.0	1.8	Dark grey sandy clay and bands of quartz grits, occ. Pebbles to several cm's.
	1.0	2.5	1.5		Sandy clay, with minimum wash				
	2.5	4.0	1.5		Grey plastic clay				
	4.0	5.0	1.0		Gravel wash				
	5.0				Oxidised granite basement				
MCH PIT NO 10	0	1.5	1.5		Ferruginous sandy soil	M 110	3.5 to 4.0	1.8	Grey brown ferruginous grits with sandstone clasts, angular and blocky to 3 cm and occ, quartz pebble to 2 cm; very clay rich with some bluish biotite or chlorite outlining a granite texture
	1.5	3.5	2.0		Grey sandy clay				
	3.5	4.0	0.5		Grey brown gravel wash				
	4.0				Oxidised granite basement				



MINERAL HOLDINGS AUSTRALIA PTY., LIMITED 868043 **EL 10 / 2000**

PROJECT: MONARCH **TENEMENT:** EL 10/2000 **DATE:** 14th June 2001

SAMPLE	INTERVAL			VOL	CONC	CASSITERITE			TITANIUM			ZIRCON			GOLD		SAPPHIRE		TANTALUM			NIOBIUM		
MHAP/L *AMDEL*	FROM m	TO m	INT m	LCM	WT grams	% Sn	70% SnO_2 grams	70% SnO_2 g/LCM	$\%TiO_2$	TiO_2 grams	TiO_2 g/LCM	$\%ZrO_2$	ZrO_2 grams	ZrO_2 Total grams	Au mg	Au mg/LCM	gm	g/LCM	$\%Ta_2O_5$	Ta_2O_5 gm	Ta_2O_5 gm/LCM	$\%Nb_2O_5$	Nb_2O_5 gm	Nb_2O_5 gm/LCM
MCH 1 101A	3.0	4.2	1.2	1.8																				
Non M					957	16.23	220.56	122.5	0.23	2.20	**1.22**	1.53	14.642	14.642										
Check Non M																								
Mag 1					120.7				14.8	17.864	**9.92**													
Check Mag 1																								
Mag 2					13.4																			
GRADES								**122.5**			**11.147**			**14.642**										
MCH 1 102	2.4	4.2	1.8	1.8																				
Non M					1517	16.75	360.82	200.5	0.21	3.19	1.77	0.24	3.6408	2.02	1.70	0.9	0.007	0.0039						
Check Non M																								
Mag 1					74.6				29.2	21.783	12.10													
Check Mag 1																								
Mag 2					5.4																			
GRADES								**200.5**			**13.872**			**2.02**		**0.9**		**0.0039**						
(Dish) M102	2.4	4.2	1.8	0.003	78.1	39.9	44.25	**14750**																
MCH 2 103	2.9	4.0	1.1	1.8																				
Non M					2426	36.8	1267.7	704.3	0.46	11.16	6.20	0.91	22.077	12.265										
Check Non M																								
Mag 1					74.4				46.1	34.298	19.055													
Check Mag 1	Insufficient sample																							
Mag 2					108.9																			
GRADES								**704.3**			**25.254**			**12.265**										
(Dish) M103	2.9	4.0	1.1	0.006	49.5	44.6	31.349	**5224.9**																
(Dish) M103A	2.9	4.0	1.1	0.006	45.7	38.1	24.725	**4120.8**																

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED 868044 **EL 10 / 2000**

PROJECT: MONARCH **TENEMENT:** EL 10/2000 **DATE:** 14th June 2001

SAMPLE	INTERVAL			VOL	CONC	CASSITERITE			TITANIUM			ZIRCON			GOLD		SAPPHIRE		TANTALUM			NIOBIUM		
MHAP/L *AMDEL*	FROM m	TO m	INT m	LCM	WT grams	% Sn	70% SnO_2 grams	70% SnO_2 g/LCM	%TiO_2	TiO_2 grams	TiO_2 g/LCM	%ZrO_2	ZrO_2 grams	ZrO_2 Total grams	Au mg	Au mg/LCM	gm	g/LCM	%Ta_2O_5	Ta_2O_5 gm	Ta_2O_5 gm/LCM	%Nb_2O_5	Nb_2O_5 gm	Nb_2O_5 gm/LCM
MCH 3 NS																								
MCH 4 104	2.8	3.3	0.5	1.5																				
Non M					3376	2.21	105.95	70.6	0.08	2.70	1.80	0.06	2.03	1.35	1.70	1.1								
Check Non M																								
Mag 1					17.9				20.2	3.62	2.41													
Check Mag 1																								
Mag 2					3.1																			
GRADES								70.6			4.21			1.35		1.1								
(Dish) M104	2.8	3.3	0.5	0.006	19.9	17.6	4.97	828.9																
MCH 5 105	4.0	5.0	1.0	1.8																				
Non M					6390	28.0	2540.7	1411.5	0.69	44.09	24.50	1.36	86.904	48.28	3	1.7								
Check Non M																								
Mag 1					288.1				40.9	117.83	161.92													
Check Mag 1						*6.26*	*25.653*	*14.252*	*5.00*			*0.11*	*0.3036*	*0.17*					*NA*			*0.0801*	*0.23*	*0.13*
Mag 2					113.2																			
GRADES								1425.7			186.42			48.449		1.7								0.13
(Dish) M105	4.0	5.0	1.0	0.006	105	46.1	68.735	11456																
MCH 6 106	4.7	5.2	0.5	1.8																				
Non M					9100	1.57	202.88	112.7	0.32	29.12	16.18	1.08	98.28	54.6										
Check Non M																								
Mag 1					561.5				39.7	222.92	123.8													
Check Mag 1																								
Mag 2					87.1																			
GRADES								112.7			140.02			54.6										

MINERAL HOLDINGS AUSTRALIA PTY., LIMITED

868045

EL 10 / 2000

PROJECT: MONARCH **TENEMENT:** EL 10/2000 **DATE:** 14th June 2001

SAMPLE	INTERVAL			VOL	CONC	CASSITERITE			TITANIUM			ZIRCON			GOLD		SAPPHIRE		TANTALUM			NIOBIUM		
MHAP/L *AMDEL*	FROM m	TO m	INT m	LCM	WT grams	% Sn	70% SnO_2 grams	70% SnO_2 g/LCM	%TiO_2	TiO_2 grams	TiO_2 g/LCM	%ZrO_2	ZrO_2 grams	ZrO_2 Total grams	Au mg	Au mg/LCM	gm	g/LCM	%Ta_2O_5	Ta_2O_5 gm	Ta_2O_5 gm/LCM	%Nb_2O_5	Nb_2O_5 gm	Nb_2O_5 gm/LCM
MCH 6 107	5.2	5.7	0.5	1.8																				
Non M					8200	6.35	739.39	410.8	0.20	16.4	9.1111	0.57	46.74	25.967	1.7	0.9	0.006	0.0033						
Check Non M																								
Mag 1					417.1				29.9	124.71	69.285													
Check Mag 1																								
Mag 2					73.2																			
GRADES								**410.8**			**78.396**			**25.967**		**0.9**		**0.0033**						
(Dish) M107	5.2	5.7	0.5	0.006	12.9	3.5	0.6411	**106.9**																
MCH 7 NS																								
MCH 8 108	4.6	5.1	0.5	1.8																				
Non M					2662	7.55	285.39	158.55	0.39	10.382	5.77	1.03	27.419	15.233										
Check Non M																								
Mag 1					77.6				30.9	23.978	13.321													
Check Mag 1						*0.44*	*0.49*	*0.27*	*6.7*			*0.20*	*0.16*	*0.09*					*0.0476*	*0.037*	*0.0205*	*0.143*	*0.11*	*0.06*
Mag 2					8.9																			
GRADES								**158.82**			**19.09**			**15.32**							**0.0205**			**0.06**
(Dish) M108	4.6	5.1	0.5	0.006	32.9	17.3	8.0822	**1347**																

PROJECT: MONARCH **TENEMENT:** EL 10/2000 **DATE:** 14th June 2001

SAMPLE	INTERVAL			VOL	CONC	CASSITERITE			TITANIUM			ZIRCON			GOLD		SAPPHIRE		TANTALUM			NIOBIUM		
MHAP/L *AMDEL*	FROM m	TO m	INT m	LCM	WT grams	% Sn	70% SnO_2 grams	70% SnO_2 g/LCM	%TiO_2	TiO_2 grams	TiO_2 g/LCM	%ZrO_2	ZrO_2 grams	ZrO_2 Total grams	Au mg	Au mg/LCM	gm	g/LCM	%Ta_2O_5	Ta_2O_5 gm	Ta_2O_5 gm/LCM	%Nb_2O_5	Nb_2O_5 gm	Nb_2O_5 gm/LCM
MCH 9 109	4.0	5.0	1.0	1.8																				
Non M					4106	6.5	378.98	210.5	0.30	12.318	6.84	0.48	19.709	10.949	1.7	0.94								
Check Non M																								
Mag 1					202.1				34.5	69.725	38.736													
Check Mag 1						*0.16*	*0.3234*	*0.1796*	*8.34*			*0.10*	*0.20*	*0.11*					*0.0574*	*0.116*	*0.0644*	*0.1574*	*0.3181*	*0.1767*
Mag 2					57.6																			
GRADES								**210.7**			**45.58**			**11.063**		**0.94**					**0.06**			**0.18**
(Dish) M109	4.0	5.0	1.0	0.006	22.5	16.9	5.3996	**899.9**																
MCH 10 110	3.5	4.0	0.5	1.8																				
Non M					2686	13.3	507.28	281.8	0.30	8.06	4.48	0.82	22.025	12.236			0.008	0.0044						
Check Non M																								
Mag 1					187.4				41.4	77.584	43.10													
Check Mag 1						*0.46*	*1.2262*	*0.68*	*10.01*			*0.18*	*0.33*	*0.18*					*0.0305*	*0.0572*	*0.0318*	*0.1574*	*0.295*	*0.1639*
Mag 2					94.5																			
GRADES								**282.5**			**47.58**			**12.419**				**0.0044**			**0.0318**			**0.1639**
(Dish) M110	3.5	5.0	0.4	0.006	32.4	26.3	12.1	**2016.7**																

APPENDIX III - ANALYTICAL RESULTS JUNE 2001

Includes Resource Calculation Sheets

MONARCH PROJECT

ORE RESERVE ESTIMATION SHEET

LOCATION	HOLE	INTERVAL metres	GRADE gm/LCM	WEIGHTED	AREA m^2	VOLUME m^3
A LENS						
	F15	1.07	1097.57	1170.89	32800	34991
	F17	1.98	741.60	1469.26	14700	29124
	17F4G	0.76	556.20	422.49	28900	21952
	19F8G	0.46	1668.60	767.56	20000	9200
	F19	0.15	593.28	88.99	10160	1524
	19F4G	0.30	370.80	111.98	9375	2831
	21F8G	0.31	407.88	125.14	15104	4634
	21F10G	0.27	315.18	85.96	16150	4405
	21F14G	2.59	1423.87	3687.83	9500	24605
	G21	0.30	264.38	79.84	2500	755
	G23	0.61	1854.00	1124.27	34000	20618
	23G4H	0.45	444.96	201.83	15625	7088
	23G8H	0.52	2447.28	1279.83	21875	11440
	25G8H	0.76	1093.86	836.58	32161	24597
	25G12H	1.07	741.60	791.44	24400	26040
	H25	0.61	964.08	588.47	56640	34573
TOTALS		12.2		12832.35		258375
AVERAGES		**0.76**	**1050.41**			
VOLUMES						**258375**

LOCATION	HOLE	INTERVAL metres	GRADE gm/LCM	WEIGHTED	AREA m^2	VOLUME m3
B LENS						
	13F8G	0.15	248.44	37.86	25,921	3,950
	15F8G	3.23	302.57	976.34	25,921	83,642
	G17	3.05	778.68	2,374.66	25,921	79,049
	17G4H	0.61	322.23	196.56	25,921	15,812
	19G4H	0.21	4,338.36	913.49	25,921	5,458
	19G8H	0.31	3,559.68	1,090.69	25,921	7,942
	21G6H	0.15	222.48	34.44	25,921	4,013
	21G8H	0.61	1,520.28	923.72	25,921	15,750
	21G10H	0.16	74.16	11.57	25,921	4,044
	21G12H	0.61	5,116.67	3,104.79	25,921	15,729
	21G14H	0.30	10,019.02	3,025.74	25,921	7,828
	H21	0.46	990.04	452.25	25,921	11,841
TOTALS		9.84		13,142.11	176,100	255,056
AVERAGES		**0.82**	**1,336**			
VOLUMES						**255,056**

MONARCH PROJECT

ORE RESERVE ESTIMATION SHEET

LOCATION	HOLE	INTERVAL metres	GRADE gm/LCM	WEIGHTED	AREA m^2	VOLUME m^3
E LENS						
	G27	0.91	1,854.00	1,690.11	25921	23630
	27G4H	0.76	1,186.56	901.31	25921	19690
TOTALS		1.67		2,591.42	51842	43319
AVERAGES		**0.84**	**1,550.63**			
VOLUMES						**43319**

LOCATION	HOLE	INTERVAL metres	GRADE gm/LCM	WEIGHTED	AREA m^2	VOLUME m^3
D LENS						
	15E4F	0.30	144.24	43.27	25921	7776
	17E4F	0.76	142.39	108.21	25921	19700
	19E12F	1.22	135.71	165.57	25921	31624
TOTALS		2.28		317.06	77763	59100
AVERAGES		**1.14**	**139.06**			
VOLUMES						**59100**

MONARCH PROJECT

ORE RESERVE ESTIMATION SHEET

LOCATION	GRADE gm/ BCM	VOLUME m^3	WEIGHTED
Lens A	1050	258,375	271,400,519
Lens B	1336	255,056	340,656,676
Lens E	1551	43,319	67,172,130
TOTALS	3937	556,751	679,229,324
AVERAGE	**1,220**	**556,751**	

95-3703.

74500 mE

Dam

Dam

LITTLE BOOBYALLA RIVER

Vicary Creek

Vicary Creek

Shallomar Creek

15D8E
15D12E
E15
E17
E19
E21
15E4F
17E4F
19E4F
21E4F
23E4F
15E8F
19E8F
21E8F
23E8F
15E12F
19E12F
21E12F
23E12F
25E12F
F15
F17
F19
F21
F23·5
F25
15F4G
17F4G
19F4G
21F4G
23F4G
25F4G
15F8G
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21F10G
21F12G
23F12G
25F12G
27F12G
G15
G17
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15G4H
17G4H
19G4H
21F14G
21G4H
23G4H
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19G8H
21G6H
21G8H
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25G8H
27G8H
15G12H
17G12H
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21G10H
21G12H
23G12H
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27G12H
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13E12F
F13
13F4G
13F8G
11F12G
13F12G
G11
G13
11G4H
11G8H
13G8H
11G12H
13G12H
H11
11H4J
11H8J
11H12J
J11

A
B
D
E

00 mN

64000

74 500 mE

LEGEND

- Possible Ore Reserve Areas
- 200g. cut off grade
- 100g. cut off grade
- Mined Area
- Workings by Endurance & BMI
- BHP Conrad Drillhole
- Old Workings
- Tailings Dump
- Road & Track

N

SCALE

0 100 200 300 400 500 metres

02_4641

Amdex Mining Limited

Geological ASsessment and Ore Resource Statement on the Monarch Project, Mt Cameron, Mineral Holdings Australia Proprietary Limited"; Niugini Kinnane, N.R. EL10/2000

MONARCH ORE RESERVE BLOCKS

868051

CONSOLIDATED MINING LEASE 57M / 73

NORTH - EAST TASMANIA

5 cm

FIGURE 6

Author T.I. NEALE	Date: April, 1980	Dwg No. P.136/9
Drawing B.G	Report No.	Base Plan