

# INDEPENDENT TECHNICAL REPORT ON THE MINERAL RESOURCE ESTIMATE, GREAT PYRAMID TIN PROPERTY, AUSTRALIA



\*Site Visit – Great Pyramid Property (MA 2023)

Prepared by Mining Associates Pty Ltd

for

TinOne Resources Inc.

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### **1 SUMMARY**

The Great Pyramid Tin Property is located 87 kms east of the city of Launceston in northeast Tasmania, Australia. The Property is covered by retention licence RL2/2009, with Title to the Property held by TinOne Resources Australia Pty Ltd, a wholly owned subsidiary of TinOne Resources Inc., a public company listed on the TSX Venture Exchange in Canada (TSX-V "TORC").

Mining Associates Pty Ltd ("MA") was commissioned by TinOne Resources Australia Pty Ltd ("TinOne", or "the Company") to prepare a Mineral Resource Estimate ("MRE") and Technical Report on the Great Pyramid deposit.



Figure 1-1. Great Pyramid Project Location [MA, Aug 2023]

#### 1.1 PROJECT HISTORY AND GEOLOGY

Tin mineralization was discovered at Great Pyramid in 1909, and the deposit was exploited by small scale surface and underground mining periodically up to 1936. Exploration consisting of surface and underground sampling, geophysical surveys, petrological and structural studies and multiple programs of drilling, leading to several resource estimates, was undertaken on the property up to 2018 before TinOne's involvement commencing in 2022.

A total of 214 drill holes for 13,916.7m have been drilled at the Great Pyramid Property, with BHP/Billiton, Paring-Aberfoyle, the Tasmanian Mines Department and TNT Mines undertaking percussion, RC and diamond drilling prior to a 29 RC and diamond drilling programs completed by TinOne in 2022.

The Eastern Tasmanian Terrain in which the property is situated consists of allocthonous Ordovician to Early Devonian quartz-wacke to pelitic turbidites known as the Mathinna Supergroup. Locally, three separate packages have been recognised at deposit scale (Bull, 2023), with the Mathinna Group host succession to the Great Pyramid tin prospect interpreted to comprise thick channel sandstone intervals within a mosaic of thinner-bedded and finer-grained channel margin and overbank deposits.

The three local facies consist of a dominantly silt/mudstone facies, an interbedded thin to medium bedded sandstone and silt/mudstone facies, and a dominantly medium to thick bedded sandstone



facies which is the main host to the mineraisation. Extensive silicification associated with mineralization generally destroys all primary sedimentary textures, making sedimentological studies difficult.

The Mathinna Supergroup units are folded about approximately NW-SE axes, with evidence that the Great Pyramid deposit lies on the upright limb of a gently SE-plunging anticline with its hinge to the northeast. A steeply SW dipping NW-striking thrust fault, the Pyramid Hill Fault (Reed A. , 2023), transects the property.

The bulk of the tin mineralization at Great Pyramid occurs in veinlets developed along close spaced joints predominantly 1 to 5 mm in width. The joints strike at about 070° and dip at 60° to 70° to the northwest. Cassiterite (tin oxide) is present in the veins, generally with two or more of the following minerals: quartz, muscovite, fluorite, siderite, sulphides (arsenopyrite, pyrite, sphalerite, galena, chalcopyrite and/or their decomposition products scorodite and goethite), tourmaline and wolframite (at depth).

The Great Pyramid mineralization is currently known over a strike length of more than 500 metres with an average width of approximately 150 metres. The few deeper drill holes at Great Pyramid have encountered tin mineralization, with a similar tenor to near surface mineralization, at depths of approximately 300 metres below surface.

# **1.2 RESOURCE ESTIMATION**

Seven historic resources have been estimated for the project. All historical estimates are non-verified estimates issued prior to TinOne's interest in the project and are not compliant with NI43-101 reporting standards.

The earliest five estimates, three undertaken in quick succession by BHP in 1981, used available drill and adit data and were estimated by polygonal methods. The 1986 estimate, which was generated at a 0.1% tin cut-off, was not reported or classified in accordance with either the JORC code or NI43-101 and is described as preliminary only (Hall, D.B. and Carter, D.N., 1986). The interpreted polygons extend to around the base of percussion drilling and the model represents a comparable volume to the current estimate.

The 1996 model (Morrison & Knight, 1996), which was also not reported or classified in accordance with the JORC code or NI43-101, included the deeper broadly spaced diamond drilling. The inversedistance squared model estimated similar tonnes to the MA model, although with a higher tin grade for more metal.

The 2011 block model (Abbott, 2011) was reported and classified in accordance with the JORC code (2004), and subsequently updated to conform to JORC 2012 by Niuminco (Niuminco Group Limited , 2014).

For the estimate that is the subject of this report, a block model was created in the National grid (GDA94, MGA Zone 55) using Surpac software (v7.6.2) to cover the entire extent of the mineralized domains for Great Pyramid. The early percussion drilling was deemed too unreliable to include in the resource estimation.

The reported resource includes tin, tungsten, bismuth and arsenic grades estimated using ordinary kriging following semi-variogram analysis. Only tin is reported as having reasonable prospects of economic extraction.

#### **1.3 MINERAL RESOURCE STATEMENT**

The resource estimate prepared by MA for the Great Pyramid deposit has been classified as Inferred Mineral Resources based on the classification criteria outlined in the CIM Definition Standards for



Mineral Resources and Mineral Reserves (Canadian Institute of Mining, Metallurgy and Petroleum (CIM), 2014).

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that majority of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Table 1-1. Great Pyramic	Tin Deposit Inferred Minera	l Resource (> 0.10% Sn) **
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Cut-off	Tonnes (Mt)	Tin grade (%)	Metal (Sn kt)	
> 0.10	8.39	0.17	14.40	

\*\* Open pit mineral resources are reported at a Sn cut-off grade of 0.10% inside a resource shell based on a Sn price of USD \$24,978/t and 80% recovery. All numbers have been rounded to reflect the relative accuracy of the estimate. Mineral resources are reported in relation to a conceptual pit shell. Mineral resources are not mineral reserves and do not have demonstrated economic viability. Numbers may not add up because of rounding of values.

#### 1.4 CONCLUSIONS

The Great Pyramid Project is an early-stage tin exploration project located in the northeast corner of the state of Tasmania, Australia. The history of Great Pyramid dates to the turn of the 20<sup>th</sup> century when The Great Pyramid Tin Mining Company carried out early exploratory tunnelling and shaft sinking during the period of 1909-1910. Mr H. Aulich produced 5.379 t tin concentrate between 1928 and 1936. Geologists from BHP initially drilled open hole percussion holes in 1965 after identifying the tin potential during regional reconnaissance along the Tasmanian Coast.

Drilling by TinOne and previous owners of the property has identified the extents of tin mineralization hosted within multiple zones of sheeted quartz-cassiterite veins that intersect a folded succession of sandstone, siltstone and mudstone.

191 RC and diamond drill holes, for 13,074 m, have delineated an Inferred Mineral Resource of 8.9 million tonnes grading 0.17% Sn. Mineral resources were estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserve Best Practices" guidelines by ordinary kriging using Geovia's Surpac software. Mineral resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent resource estimates.

MA is not aware of any significant risks and uncertainties that could be expected to affect the reliability or confidence in the early-stage exploration information discussed herein.

# 1.5 **RECOMMENDATIONS**

MA recommends that TinOne continues to explore the Great Pyramid Project.

Specifically, MA recommends additional drilling to extend the mineralization deeper, as the overlying topography affords low strip ratios which should allow incremental increases in depth without the burden of additional waste being moved.

Drilling is recommended to target previously identified deep mineralization and confirm that it extends up dip between 0 and 100 mRL, approximately 90m below surface, potentially merging with known mineralization at surface.

Further recommendations include replacing some of the open hole percussion drilling with RC or diamond drilling to increase the confidence on the known mineralization informed by historic (1970's) drilling. MA also recommends that TinOne initiates a preliminary metallurgical testing program to determine the viability of extracting cassiterite, and to better define the tin recovery. Additionally, MA recommends that TinOne continue to collect bulk density data to enhance the quality of future mineral estimates.



Following the next drilling campaign, and contingent on positive results, MA recommends that TinOne prepare a Preliminary Economic Assessment ("PEA") for the Great Pyramid Project.



# 2 INTRODUCTION

# 2.1 PURPOSE

This Independent Technical Report on the Great Pyramid Tin Property has been prepared by Qualified Persons Ian Taylor and James Lally of Mining Associates Ltd ("MA") for TinOne Ltd. ("TinOne"). The purpose of this Technical Report is to document a new Mineral Resource Estimate for the Property and meet the requirements of section 4.2.(1) (j) of NI43-101.

### 2.2 TERMS OF REFERENCE AND RELEVANT GUIDELINES

This Technical Report covers the Great Pyramid Tin deposit and is written in compliance with disclosure requirements of Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI43-101"). Terms and methodologies applied comply with the Standards of Mineral Resources and Reserves of the Canadian Institute of Mining, Metallurgy and Petroleum (the CIMM Guidelines, 2019).

#### 2.3 INFORMATION USED

This report is based on technical data provided by TinOne to MA. TinOne provided open access to all the records necessary, in the opinion of MA, to enable a proper assessment of the property and resource estimates. TinOne has warranted in writing to MA that full disclosure has been made of all material information and that, to the best of TinOne's knowledge and understanding, such information is complete, accurate and true.

Information has been mainly sourced from:

- Documents lodged with Mineral Resources Tasmania, which contain details of historical work from 1914 onwards, including mapping, drilling and underground sampling.
- New drilling and surface mapping by TinOne.

Additional relevant material was acquired independently by MA from a variety of sources. Historical documents and data sources used in the preparation of this technical report are listed in the Bibliography. This material was used to expand on the information provided by TinOne and, where appropriate, confirm or provide alternative assumptions to those made by TinOne.

#### 2.4 CURRENT PERSONAL INSPECTION BY QUALIFIED PERSONS

A site visit to the Project was carried out 8<sup>th</sup> to 10<sup>th</sup> August 2023 by Mr Ian Taylor, QP for Mineral Resources. Activities during the site visit included:

- Review of the geological and geographical setting of the Project.
- Review and inspection of the site geology, mineralization, and structural controls on mineralization.
- Review of the drilling, logging, sampling, analytical and QA/QC procedures.
- Review of the chain of custody of samples from the field to assay lab.
- Review of the drill logs, drill core, storage facilities and independent assay verification on selected core samples.
- Confirmation of some drill hole collar locations.
- Review of the artisanal operations that are dedicated to the recovery of Sn.

- Assessment of logistical aspects, potential OP locations, potential waste dumps and other surface infrastructure practicalities relating to the Property.
- Review of the structural measurements recorded within the drill logs and how these measurements are utilized within the 3D structural model.
- Validation of a portion of the drill hole database.

# **3** RELIANCE ON OTHER EXPERTS

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure was reviewed by means of the public information available through the Tasmanian Government's online data system containing tenure and geoscience information.

MA has relied upon this public information, as well as tenure information from TinOne, and has not undertaken an independent detailed legal verification of title and ownership of the Great Pyramid Project. MA has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on, and believes it has a reasonable basis to rely upon, TinOne to have conducted the proper legal due diligence.

No other experts have been relied upon to provide information relevant to this report and the authors do not disclaim any responsibility for the content.



# 4 PROPERTY DESCRIPTION AND LOCATION

The Great Pyramid Property of TinOne is covered by Retention Licence RL2/2009 and is located over Siluro-Devonian Mathinna Supergroup sediments in northeast Tasmania. The licence area is located 11 kms south-west of the regional town of St Helens and approximately 87 kms east of the city of Launceston (Figure 4-1) at Latitude -41° 25.5' (S), Longitude 148° 11.7' (E). The licence is accessed via the Upper Scamander and Eastern Creek roads from the Tasman Highway. Access through the tenement is via unsealed public forestry roads and four-wheel drive tracks. The tenement can be found on the Nicholas (1:50,000) TASMAP sheet. All maps and figures in this report are registered on the Australian Geodetic Grid GDA94 datum, Zone 55.

Topographically the area is of moderate to steep relief with a central steep-sided ridge crossing the property in a north-west to south-east orientation. The area is predominantly used for forestry and is managed by Sustainable Timber Tasmania. Vegetation is predominantly pine plantation and open eucalypt bushland with scrubby watercourses.

There are no significant factors and risks that may affect access, title, or the right or ability to perform work on the property.



Figure 4-1. Great Pyramid Location Plan [TinOne, Aug 2023]

#### 4.1 **PROPERTY TENURE**

The Property is covered by Retention Licence RL2/2009 (4km<sup>2</sup>) as shown in Table 4-1 and **Error! Reference source not found.** The tenement's status can be verified by publicly available information on Mineral Resources Tasmania's (MRT) online tenement viewing portal at: http://mrt.tas.gov.au This includes registered ownership of lease and licence boundaries.



Title to the Property is held by TinOne Resources Australia Pty Ltd, a wholly owned subsidiary of TinOne Resources Inc., a public company listed on the TSX Venture Exchange in Canada (TSX-V "TORC").

#### Table 4-1. RL2/2009 Land Tenure Summary

Item	Value
Licence ID	RL2/2009
Name of Area	Pyramid Hill
Area of Sub Blocks	4km <sup>2</sup>
Issue Date	2/8/2022
Expiry Date	1/8/2024
Annual Rent	\$12,210.80
Minimum Expenditure	\$NA





Figure 4-2. RL2/2009 Land Tenure [TinOne, Aug 2023]



# 4.2 **PROPERTY RIGHTS AND OBLIGATIONS**

RL2/2009 is located on predominantly on crown land designated as Future Potential Production Forest. An informal reserve runs through the property and there is a small section of private land. There are no dwellings or other structures on the property. All land within the tenement is available for mineral exploration.

Mineral exploration and mining in Tasmania is regulated by the State Government Mineral Resources Development Act 1995. Mineral Resources Tasmania, a division of the Department of State Growth, is responsible for the administration and regulation of mining and exploration activities in the state.

Exploration licences in Tasmania are initially granted for a period of five years. The term of an exploration licence may be extended at the discretion of the Minister if the holder is able to show grounds for extension.

Exploration licences may be granted for one or more of the following mineral categories:

- Category 1: metallic minerals and atomic substances
- Category 2: coal, peat, lignite, oil shale and coal seam gas
- Category 3: rock, stone, gravel, sand and clay used in construction, bricks and ceramics
- Category 4: petroleum products except oil shale
- Category 5: industrial minerals, precious stones, semi-precious stones
- Category 6: any geothermal substance

In Tasmania, a retention licence (RL) can be granted where:

- The land comprised in the licence is likely to be able to be effectively and efficiently mined for the minerals, or the category of minerals, to which the licence is to relate.
- There is a sufficient quantity of minerals to justify mining.
- The applicant is justified for economic or other reasons not to proceed to mine.
- The applicant has provided a copy of the applicant's current public liability insurance policy, and
- The applicant has provided a security deposit.

RL2/2009 is a Category 1 and Category 5 Mineral Lease giving the owner the rights to all metallic minerals, atomic substances, industrial minerals, precious stones, and semi-precious stones within the lease area.

- (1) A licence authorizes the holder of the licence, a person authorized by the holder of the licence, and a person acting under a contract of service, or a contract for services, with the holder of the licence:
  - (a) To explore, in accordance with the conditions of the licence, in the area of land specified in the licence for minerals, or minerals within the category of minerals, specified in the licence.
  - (b) To enter on, and pass over, Crown land for that purpose, in accordance with the conditions of the licence, and
  - (c) Subject to subsection (2), to enter on, and pass over, private land, in accordance with the conditions of the licence, for that purpose.
- (2) A person may only enter on, or pass over, private land by giving written notice in an approved form to the owner or occupier of the land 14 days or any shorter period the owner or occupier allows before doing so.
- (3) A person must not hinder or obstruct a licensee from carrying out any activity under the licence.

TinOne are obligated to provide MRT with annual reports, detailing exploration activities completed, proposed exploration programs and expenditures. An annual report must be submitted by the



anniversary date of the licence. The annual report must be a full technical report detailing all exploration undertaken and results obtained during the year. The annual report must also include details of all work planned for the coming year. The annual report is to be in accordance with the Reporting Guidelines, including stipulated data submission formats. If the area of the licence is to be reduced, the licence holder must submit an Application to Surrender and must submit a final report on the area to be relinquished.

A retention licence is issued for a fixed term after which it is possible to apply for an extension of the term. An application for an Extension of Term must be submitted with a proposed work program, before the licence expires, if the licence is to be retained.

# 4.3 ROYALTIES, AGREEMENTS AND ENCUMBRANCES

The tenement is subject to two agreements.

- An agreement between TinOne Resources Corporation and Avenira Limited (ACN 116 296 541) provides for a 1.5% net smelter royalty, capped at AUD\$5,000,000, to be paid to Avenira on all mineral production from the tenement.
- (2) An agreement between TinOne Resources Corporation and Paul Askins and Garth Stewart provides for:
  - (a) AUD\$1,000,000 payment on commencement of mineral production from the tenement.
  - (b) A net smelter royalty of 2.25%.

#### 4.4 ENVIRONMENTAL LIABILITIES

There are no significant environmental liabilities to which the property is subject. 21 drill sites were used during TinOne's maiden drill program. The majority of drill sites utilized existing sites or were constructed on existing drill access tracks. One new drill site required 200 metres of new access track to be constructed. The Company is required to rehabilitate work carried out during the life of the current tenement but is not liable for any issues that predate granting of RL2/2009. The cost of rehabilitating disturbance to date is estimated at less than \$5,000.

The Tasmanian Department of State Growth holds a \$15,000 security deposit, provided by the Company, against environmental liabilities that the Company is responsible for.

A security deposit must be lodged before a licence can be granted. The quantum of the deposit is determined by the size of the area and the program to be carried out. A security deposit may be used to remedy damage to private property or to the environment caused by exploration activities if this is not made good by the explorer.

Licence holders must obtain written approval from MRT prior to undertaking any on-ground exploration. Work consistent with mineral exploration includes:

- conducting geological, geophysical, geobotanical and geochemical surveys
- drilling
- taking samples for the purpose of chemical or other analysis
- using appropriate instruments, equipment, and techniques
- extracting and removing from the land material, mineral, or other substances for testing.



# 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 ACCESS

The property is located approximately 6 kms northwest of Scamander on the east coast of Tasmania. A road leads from Scamander to the property and is sealed for about half the distance. The unsealed part of the road is all weather access. An all-weather four-wheel drive track crosses the centre of the tenement providing excellent access. A series of tracks constructed in the 1960s and 1970s provide access to the entire known mineralized area.

Scamander (population 800) is located on the Tasman Highway, the major road that runs along the east coast of Tasmania. Scamander is approximately 145 kms by road from the major city of Launceston (population 87,000) in northern Tasmania. Launceston is the main service centre for northern Tasmania and has an airport with regular flights to mainland Australia.

# 5.2 CLIMATE

The prevailing climate can be described as Cool Temperate with rainfall averaging 700 mm annually (Figure 5-1) and rainfall spread evenly throughout the year (Figure 5-2). Climate data for nearby Scamander are shown below for the period 1974 to 2013. It is likely that the rainfall will be at least a bit higher at Great Pyramid due to its elevation. Winter temperatures would be expected to be lower away from the tempering influence of the Tasman Sea at Scamander. Exploration activities can be conducted throughout the year although occasional high intensity rainfall events can lead to flooding of the Scamander River, restricting access to Great Pyramid. These high intensity rainfall events are usually confined to 12 to 24 hours and the river drops rapidly after the rain stops.



Figure 5-1. Mean Monthly Temperatures at Scamander (Elders Weather, 2023)





Figure 5-2. Mean Monthly Rainfall at Scamander (Elders Weather, 2023)

# 5.3 LOCAL RESOURCES AND INFRASTRUCTURE

All necessary supplies and hire equipment, such as drill rigs and earthmoving equipment, are readily available in Tasmania. The west coast and northeast of Tasmania has had a long history of mining and exploration dating back to the 1880's. Several drilling and earthmoving companies experienced with the conditions are based within three hours' drive of the project area.

Personnel experienced in earthmoving equipment are readily available locally and throughout northern and western Tasmania.

The town of St. Helens (population of 2,200) is located approximately 12 kms northeast of the project area. St Helens has all necessary services including a hospital, supermarkets, police station, motels, small airport and engineering services for the local forestry and fishing industries.

The port at St Helens is restricted to fishing vessels due to a sand bar. Supplies and equipment would be brought by road from Launceston or the nearby ports of Bell Bay (1 hour north of Launceston) or Burnie (two hours west of Launceston).

#### 5.4 PHYSIOGRAPHY

The tenement is dominated by a steep sided central ridge running northwest – southeast, rising to 219 metres at the top of Pyramid Hill. The overall topographic relief is about 200 metres. Eastern Creek to the north of Pyramid Hill is semi-permanent with summer flows reduce to a trickle, and Kelly Creek to the south dries up in the summer months. The Scamander River, 2 kms south of the tenement, is a permanent river and supplies drinking water to the community of Scamander.

The dominant vegetation type on the central ridge and flanks is dry eucalypt forest and woodland dominated by *Eucalyptus sieberi*. Along Eastern Creek and in some of the lower gullies the forest type is wet eucalypt forest and woodland dominated by *Eucalyptus obliqua*. The dry eucalypt forest is remarkably open with very little undergrowth other than in the gullies.





Figure 5-3. Dry Woodland Forest at Pyramid Hill (MA 2023)



# **6 HISTORY**

#### 6.1 PREVIOUS OWNERSHIP AND EXPLORATION

Tin mineralization was discovered at Great Pyramid in 1909. Exploration completed in the period from 1908 until the commencement of tenure by TinOne Australia Pty Ltd is summarized in the table below.

Company	Year	Work Completed
Mr. Chas. Cheshire	1908-09	Discovered Great Pyramid. Obtained tin ore from wash in the creek at the foot of the hill. He carried out surface trenching near the summit on the east side and confirmed tin-bearing veins (Twelvetrees, 1911)
Great Pyramid Tin Mine N.L.	1909-11	Fifteen adits (approximately 600 metres total length) were driven into the east and west sides of Pyramid Hill, generally parallel to the mineralized fracture vein set. Several shafts were sunk. Sporadic and incomplete sampling of adits, with work being halted due to low grades (Twelvetrees, 1911).
Troy Tin Syndicate	1914	Driving of crosscuts in existing adits. A total of 14 adits had been developed by 1914. Sporadic resampling of adits and sampling of new drives. Work halted due to low grades. (Keid, H.G.W. and Gulline, A.B., 1957)
M. Roach and J.S. Robertson	1920-25	Lease(s) held but work recorded. (Keid, H.G.W. and Gulline, A.B., 1957)
Mr Espie and Mr Murrison	1925-41	Lease(s) held but no work recorded. (Keid, H.G.W. and Gulline, A.B., 1957)
Mr H Aulich	1925-36	Minor mining from the North adit and drive. A small five head stammer mill was established on the Scamander River during 1926- 27 and the first ore was treated in 1928. Between 1928 and 1936, 331 tons of ore were mined and milled to produce 5.379 tons of tin concentrate. 2.931 tons of tin were produced which gave a recovery graded of 0.88% Tin feed grade estimated at 1.5%. (Jack, 1964)
Mr MacDermott and Tasmanian Mines Department	1957	Lease held by Mr MacDermott. The Tasmania Mines Department carried out some check sampling of adits at his request. 17 bulk samples were collected. Results were a little lower than previous sampling in 1909-1911 and 1914. The sampling geologists noted that "No development has been carried out on any of the high-grade veins." The adits were developed to prospect the mineralization rather than to target high grade veins (Keid, H.G.W. and Gulline, A.B., 1957) (Clarke, 1981)
Tasmanian Mines Department	1963	3 half-ton bulk samples were taken from the North adit and surface workings. Assay results differed considerably from earlier sampling, being generally lower Some petrological work was undertaken as well as some metallurgical test work. (Jack, 1964)
Mr L Price and Mr H.D.L Palmer	1964-68	Leases held included Special Prospecting Licence No. 403, 23M1962 and 33M/1962, but no work recorded. Entered into an Option Agreement with BHP in 1964 and with Paringa Mining and Exploration Co. Ltd. in (BHP, 1982).
BHP Pty. Co. Ltd (BHP)	1964-65	BHP entered into an Option Agreement with Mr L Price and Mr H.D.L Palmer to explore on Special Prospecting Licence No. 403, and mining leases 23M/1962 and 33M/1962. Conducted geological mapping and sampling, both at surface and underground. A ground magnetics survey was undertaken. One 242 metre diamond cored hole was drilled obliquely to the main veinlet set and intercepted sporadic mineralization. Twenty-four percussion (open) holes were drilled for a total of 858 metres. Average depth was 36 metres and deepest hole was 63 metres. BHP reported discontinuous narrow intersections of Sn to 0.56% in percussion holes, but assay method may not have been reliable. Comparison of assay data from BHP percussion holes with Aberfoyle and TinOne percussion drilling suggests underreporting of tin mineralization by BHP. Concluded that the deposit was uneconomic. The Option Agreement was terminated in 1965. (Chesnut, 1965)
Geophoto Resources Consultants (Texins	1968-74	EL6/68 held immediately surrounding Great Pyramid deposit but no right to explore the mine itself. In 1968 they excavated nine costeans to the immediate south of the Great Pyramid along the strike extension of the reported mineralization. The costeans were



Company	Year	Work Completed			
Development Pty. Ltd.)		sampled randomly due to the irregular surface exposed. Only 13 samples of 183 collected yielded tin values, mostly in quartzites, and the highest tin value was 0.41% (Mortimore, 1971).			
Paringa Mining and Exploration Co. (Paringa) and Aberfoyle Management Pty. Ltd. (Aberfoyle)	1969-74	Paringa took an Option Agreement with Mr. L.D. Price and Mr. H.D.L. Palmer over three mining leases, 23M/1962, 33M/1962 and 31 m/1967, eventually acquiring them. Paringa entered into a joint venture with Aberfoyle and Aberfoyle managed exploration. Aberfoyle conducted geological mapping and soil sampling (Sn, Cu). Soil data is incomplete. Aberfoyle drilled 137 vertical percussion (open) holes between March and August 1970 for 5,025 metres and assaying 2,951 samples for tin. The holes averaged 35 metres in depth with none going deeper than 46 metres. The percussion drilling was carried out on an approximate 30x15 metre grid (Varley, 1970). This was followed by 6 vertical diamond-cored holes for 671 metres. Three zones of mineralization were identified, the North, South and Brocks blocks. Aberfoyle carried out an ore reserve calculation, based on cross sections, and estimated a reserve of 4 Mt at 0.3% Sn. Concluded that the deposit was sub-economic. (Knight, 1971)			
Tasmanian Mines Department	1976-80	In 1976, Special Reserve No. 236 was declared over the Great Pyramid to allow the Tasmania Mines Department to investigate the deposit (Drummond, 2005). Four diamond cored holes were drilled parallel to the strike of the mineralized vein set to investigate stratigraphy. Assays generally up to 0.60% Sn. One hole (MD3) intersected massive sulphides with up to 2.8% Sn. (Jennings, 1979)			
BHP Minerals Pty. Ltd. and Shell Co. Australia Ltd. (Shell)	1980-93(?)	BHP was granted a large exploration licence (EL12/78) around the Great Pyramid area in 1978, however, it excluded the Great Pyramid deposit area which was in Special Reserve No 236 (BHP, 1982). In 1980, EL10/80 was granted over the Great Pyramid prospect and amalgamated into EL12/78 in 1984. Shell entered into a joint venture with BHP in August 1982, managing exploration, and withdrew in 1986. A retention licence (RL14/1987) was granted over the Great Pyramid in 1988 and held until 1993 (?) with no further work conducted (Drummond, 2005).			
		Work carried out:			
		July 80 – July 81 (Clarke, 1981) (BHP, 1982)			
		Aeromagnetic survey.			
		<ul> <li>Geological surface mapping at 1:1,000; adit mapping at 1:200 scale including structural and fracture density analysis.</li> </ul>			
		Relogging of Aberfoyle and Mines Department core.			
		<ul> <li>Soil geochemistry survey on 25 x 50 metre grid with assaying for Sn, W, As, Cu, Pb, Zn and Ag.</li> </ul>			
		Drilled 13 inclined diamond holes for 1229 metres.			
		<ul> <li>Underground sampling of 2NLL adit (35 x 2 m metre channel samples of 30-40 kilograms each) and bulk sampling from the North, C, 2SLL, and 2NLL adits for metallurgical test work (4 x ½ tonne grab samples). Initial overgrinding resulted in test work being invalidated.</li> </ul>			
		July 81 – Aug 82 (BHP, 1982)			
		<ul> <li>Ground magnetics survey at 5 metre intervals on 50 metres grid lines</li> </ul>			
		<ul> <li>Petrological studies of 70 core samples from the drilling program.</li> </ul>			
		• Ore reserve estimation (historical) – 0.10% Sn cut-off:			
		<ul> <li>Triangulation method</li> </ul>			
		<ul> <li>4.10 Mt (Indicated)at 0.22%</li> </ul>			
		<ul> <li>8.29 Mt (Indicated + Inferred) at 0.19%</li> </ul>			
		<ul> <li>Rectangular method</li> </ul>			



Company	Year	Work Completed
		<ul> <li>3.3 Mt at 0.26% (Indicated)</li> </ul>
		Aug 82 – Aug 83 (Ruxton, 1983)
		<ul> <li>M.Sc. project with Latrobe University (Melbourne) to initiate fluid inclusion, lithogeochemical and stable isotope studies.</li> </ul>
		• An ore reserve estimate was made using Aberfoyle percussion holes only. Using 10x10x10 metre blocks and a cut-off grade of 0.1%, the following estimates were made:
		<ul> <li>2.8 Mt @ 0.225% Sn (inverse squared distance)</li> </ul>
		<ul> <li>2.9 Mt @ 0.212% Sn (Inverse distance)</li> </ul>
		<ul> <li>Channel sampling in the North, C, and 1SLL adits. Samples were collected on a lithological basis and varied in weight but were mostly greater than 5 kilograms. Assay data suggest that the North and 1SLL adit areas may be overvalued by the ore reserve calculation method and C adit undervalued.</li> </ul>
		<ul> <li>Results from 1981 bulk sample metallurgical test work at Tasmania Mines Department laboratories were received and indicate:</li> </ul>
		<ul> <li>Cassiterite ore is amenable to gravity separation with gravity circuit recoveries of 60%.</li> </ul>
		<ul> <li>Increased recovery will require grinding to -300 microns.</li> </ul>
		<ul> <li>Heavy liquid separation may be effective in pre- concentration.</li> </ul>
		<ul> <li>Magnetic separation may be useful to remove iron minerals and reduce smelter penalties.</li> </ul>
		• Othe contaminants in concentrate will need to be removed to avoid further smelter penalties.
		<ul> <li>Cassiterite grain size varies from about 10 to 400 microns with a median grain size of 150 microns.</li> </ul>
		• Further metallurgical test work is required.
		Sep 83 – Aug 84 (Ruxton, P.A., 1984)
		<ul> <li>A 3-tonne bulk sample was collected from the North, C, and 1SLL adits using a compressor and jackhammer. The sample was thoroughly mixed before a 2-tonne split was sent to Mineral Deposits Ltd. laboratories in Queensland. The metallurgical testing indicated that a traditional tin plant process of crush, grind, gravity and flotation would be required. Tin recoveries estimated at 65-70%.</li> </ul>
		Refined the geological model.
		<ul> <li>Drilled a deep hole, SPG1a (348.3 metres) beneath Pyramid Hill. The vertical hole was targeted at the postulated underlying granite, but the percussion pre-collar lifted and deviated significantly. The hole intersected a zone of deeper mineralization with 42.9 metres @ 0.22% Sn from 236.7 metres depth.</li> </ul>
		• An updated ore reserve estimate was made.
		<ul> <li>3.2 Mt at 0.22% Sn at a 0.10% cut-off. A high- grade zone of 400,000t at 0.42% at a 0.30% cut- off was estimated in the South Block</li> </ul>
		Aug 84 – Sep 85 (Whitaker, A., 1985a)
		<ul> <li>To determine whether the resource grade had been underestimated, 12 bulk samples of 500 kilograms each were taken from the North, E, F, C, 2SLL, 2NLL and 1SLL adits and surface sample sites near BPD10. The assav data</li> </ul>



Company	Year	Work Completed			
		were compared with previous bulk and channel sampling. It was concluded that an expanded bulk sampling program would be unlikely to change the resource grade. (Carter, 1985)			
		Sep 85 – Jan 86 (Whitaker, A., 1985b) (Hall, D.B. and Carter, D.N., 1986)			
		<ul> <li>Reviewed all data and concluded that the deposit was subeconomic at current tin prices.</li> </ul>			
		1986 – 1993 (Drummond, 2005)			
		<ul> <li>A 4 km<sup>2</sup> retention licence (RL14/1987) was taken out over the Great Pyramid in 1987.</li> </ul>			
		No further work done until relinquishment.			
Merrywood Coal Company	1995-1998	EL6/95 was granted to the Merrywood Coal Company Pty. Ltd. in 1995. A Datamine block model was created using historical drilling and adit sampling. An historical resource was estimated as follows:			
		8,196071 tonnes at 0.19% tin (0.1% cut-off)			
		2,466,479 tonnes at 0.31% tin (0.2% cut-off)			
		904,312 tonnes at 0.43% tin (0.3% cut-off)			
		Concluded that the deposit was uneconomic at prevailing tin prices.			
Minemakers TTT Pty Ltd (Minemakers)	2004-2011	Granted EL28/2004. In 2007, engaged Lycopodium Engineering to conduct a conceptual study into a mining operation at Great Pyramid which concluded that at the prevailing tin price of \$9,000/tonne the Great Pyramid was uneconomic as a standalone operation. Minemakers also had tenure over the nearby Anchor, Royal George, Aberfoyle and Storeys Creek tin prospects and considered that a central treatment plant for ore from multiple locations could make Great Pyramid economic at modestly higher tin prices. Converted EL28/2004 to the current RL2/2009 in 2009.			
TNT Mines Ltd (TNT)	2011-2019	Minemakers Australia created a new company, TNT Mines Ltd, through an in-species distribution of shares and transferred RL2/2009 and other Tasmanian projects to TNT in 2011.			
		TNT Mines drilled one diamond cored hole, 18GPD001, to 320.5 metres in 2018. This hole intercepted known near surface mineralization (60 metres at 0.28% tin) and a zone of deeper mineralization from 180 to 210 metres depth (30 metres at 0.26% tin) known previously from one hole drilled by Aberfoyle in 1970 (Fulton, R.L and Reid, R., 2018). No further work was done by TNT			

#### 6.1.1 Open Hole Percussion

A significant proportion (42%) of all drill metres at the Great Pyramid Project is historical open-hole percussion drilling completed in 1970. This drill set provides 34% of all samples. There are no documented sampling protocols for this drill set.

Open hole percussion drilling is prone to down hole contamination due to drill chips passing up outside the drill rods. The softer strongly oxidized material near surface, where there is a higher risk of contamination issues, is quite shallow. Once in fresh rock the hole is less likely to have problems with contamination, as the relatively hard hole wall prevents down hole contamination in most instances, although fault zones and other broken rock intervals could cause a contamination issue.

Several twinned holes were identified in the drill hole database. The pairs were extracted and analysed, with results presented in Figure 6-1 below.



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The individual twin holes generally show similar grade profiles down hole, although some peaks are higher in one drill hole compared to its twin. A T-Test was performed on each pair of holes, with the Paringa-Aberfoyle PCD comparison to the Aberfoyle Diamond holes shown below in **Error! Reference s ource not found.** The p-values show one of the three Paringa-Aberfoyle twin hole pairs is lower than the chosen significance level (5%), indicating that only one of the pairs, H054 and GPY006, has statistically significant different means. The other two PCD/Diamond pairs show no statistical difference in the mean grade of the twinned intervals.

			1		1	
Drill Type	PCD	Diamond	PCD	Diamond	PCD	Diamond
Hole Id	H054	GPY006	H041	GPY005	H056	GPY003
Count	17	17	20	20	16	15
Mean	6814	3520	3565	3668	3378	3337
± 95% con interval	2423	2275	802	1015	1539	2328
P(t<=t) two tail	0.028		0.838		0.923	

Table 6-2. Paringa-Aberfoyle PCD/Diamond Twin Holes - Statistical Analysis



A Paringa-Aberfoyle PCD hole, H034, was twinned by Billiton in 1983 with diamond hole SPG001a. Both holes show similar low grade tin values until 24 m, where the PCD hole spikes, but the diamond assays slowly increase from about 28 m. The means are statistically similar (**Error! Reference source n ot found.**).



Another twin hole comparison was able to be undertaken following the failure of a BHP pre-collar that was sampled and redrilled (Figure 6-2). The shallowest peaks are in similar positions, although with different magnitudes, and the diamond hole has a peak starting at 20 m not seen in the RC. The p-value in **Error! Reference source not found.** below shows the means are not statistically different.

TinOne (22GPDD001A) twinned a Paringa-Aberfoyle diamond hole (GPY003). While the grade profiles are comparatively erratic (Figure 6-3), the means are not statistically different (**Error! Reference source not found.**).

Company	Paringa- Aberfoyle	Billiton	внр		Paringa- Aberfoyle	TinOne
Drill Type	PCD	Diamond	RC	RCD	Diamond	Diamond
Hole Id	H034	SPG001a	BPD009a	BPD009b	GPY003	22GPDD001A
Count	22	15	21	22	62	97
Mean	981	653	1729	2446	2539	1607
± 95% con interval	736	590	638	1271	742	587
P(t<=t) two tail	0.554		0.356		0.220	

#### Table 6-3. Twin Holes - Statistical Analysis

#### 6.1.1.1 Open Hole Percussion Opinion

After the review of the twin holes, MA concluded that the Great Pyramid open hole percussion drilling done by Paringa-Aberfoyle is sufficiently reliable for inclusion in the estimation of an inferred mineral resource. The data is globally similar to other drilling methods, however individual local assays may vary significantly.



# 6.2 HISTORIC RESOURCE AND RESERVE ESTIMATES

Seven historic resources have been estimated for the project. All historical estimates presented in this chapter are non-verified estimates prepared prior to TinOne's interest in the property and are not compliant with NI43-101 reporting standards.

The estimates are presented for comparison purposes only and the work cannot be reliably verified. Historical estimates do not use CIM standards for resource categories.

All resources described below are considered historical.

# 6.2.1 Pre-1986 Estimates

The earliest reported resource estimate for the Great Pyramid tin project was a sectional estimate undertaken by Paringo-Aberfoyle during the period 1969 to 1974. BHP subsequently assessed the project using a variety of methodologies for three different estimates prepared during 1981. These previous estimates used available drill and adit data and are summarised below.

Assessment By	Year	In Situ Reserves (Indicated)	In Situ Reserves (Indicated + "Inferred")	Method of Determination
Paringa-Aberfoyle	1969-74	4 Mt at 0.3% Sn		Based on cross-sections
ВНР	1981	4.1 Mt at 0.22% Sn	8.29 Mt at 0.19% Sn	Triangulation, based on levels (to 90 level)
ВНР	1981	3.3 Mt at 0.26% Sn	-	Rectangular, based on 170 level only with correction applied to all levels
внр	1981	442,101 t at 0.20% Sn	-	Tonnage for North Block in "possible" category
** Includes correction for estimated increase in grade from sludge assays		**658,527 t at 0.19% Sn	-	As above. Use of sludge assays in diamond holes (BPD series only).

Table 6-4. Historic	Estimates	Pre-1986	(Hall.)	D.B.	and	Carter.	D.N.,	1986)
	Lotiniates	110 1000	(11011)	0.0.	ania	curter,	D,	±300,

The BHP estimates were based on all diamond and percussion drill and adit data available as of September 1981 and the calculations assumed equal weighting of grades determined from all sources.

#### 6.2.2 Shell Estimate 1984

The 1984 estimate undertaken by Shell (Hall, D.B. and Carter, D.N., 1986) is not reported or classified in accordance either the JORC code or NI43-101 and is described as preliminary only. The data on which the estimate was based was deemed unreliable for several reasons, in particular an apparent undervaluing of both the sludge assays from diamond drill holes and the percussion drill hole samples, which did not recover all the cassiterite from the veins and fractures hosting the mineralization.

Estimates were generated at cut-off grades of 0.1% and 0.2% Sn for three distinct blocks, with initial cross-sectional resource blocks transferred to 10 m level plans and refined for grade and tonnage calculations. The interpreted resource polygons extend to around the base of percussion drilling and were used to calculate tonnages for each 10 m level, with an assigned specific gravity of 2.65 t/m<sup>3</sup>. Average arithmetic grades for each level were calculated using all the intercepts enclosed within the resource boundary, with no weighting applied.

Resource Area	M Tonnes	Sn %	Sn T
0.1% Sn Cut-off Grade			
North Block	0.897	0.19	1725
South Block	1.980	0.24	4765
Brocks Block	0.253	0.17	435
TOTAL	3.130	0.22	6925
0.2% Sn Cut-off Grade			
North Block	0.180	0.36	650
South Block	0.428	0.43	1840
Brocks Block	0.059	0.32	190
TOTAL	0.667	0.40	2668

Table 6-5. Shell 1984 Resource Estimates (Hall, D.B. and Carter, D.N., 1986)

An estimate was also made for untested areas of potential mineralization between holes with mineralized intercepts greater than 0.1% Sn and a cross-cutting dyke believed to influence the mineralization. The calculated potential tonnage for the three areas included above totals 2.5 million tonnes, with no grade estimate assigned.

# 6.2.3 Merrywood Coal Company Estimate 1996

The 1996 model (Morrison & Knight, 1996) includes the deeper broadly spaced diamond drilling, but sampling data from the 14 adits was not included, and the estimate was not reported or classified in accordance with either the JORC code or NI43-101. Block modelling was carried out with a 15 m x 15 m x 5 m (xyz) cell size, and open pits were defined.

Semi-variogram analysis was undertaken and search radii of 10 m vertically and 40 m horizontally were used to assign block grades via the inverse-distance squared method. Tonnages and grades were constrained by topography and reported with an assigned specific gravity of 2.65 t/m<sup>3</sup> for the total insitu resource down to 0 m RL (approximately 190 metres below surface) and for two conceptual pits.

Resource Area	Cut-off Grade	M Tonnes	Sn%
Total In citu	0.1	8.196	0.19
Total m-situ	0.2	2.466	0.31
South Block	0.1	1.028	0.27
Conceptual Pit	0.2	0.696	0.33
North Block	0.1	0.360	0.22
Conceptual Pit	0.2	0.184	0.29

Table 6-6. Merrywood Coal Estimates (Morrison & Knight, 1996)

#### 6.2.4 TNT Mines Limited Estimate 2011

The 2011 model (Abbott, 2011) was reported and classified in accordance with the JORC code (2004), and subsequently updated to conform to JORC 2012 by Niuminco (Niuminco Group Limited , 2014).

A mineralized domain wireframe was interpreted for the model based on down hole tin assays and used to restrict the estimate to the area of reasonably close spaced drilling and exclude overlying soil units. The flat-lying mineralized domain extends for a strike length of approximately 520 metres with an average thickness of 39 metres.

In addition to the mineralized wireframe, volumes representing a barren cross-cutting dolerite dyke and several historic adits, extruded 1 metre above and below their nominal elevations from a set of closed strings, were defined as closed wireframes for use in the resource estimation.

Semi-variogram analysis was undertaken and block modelling was carried out with a 15 m x 30 m x 3m (xyz) cell size. Block grades were assigned by Multiple Indicator Kriging of 1.5 m down-hole composites with search radii for a 3-pass estimation strategy of 20-30 m (x), 40-60 m (y) and 4-6 m (z).

Tonnages and grades were constrained by topography and trimmed by the dyke and adit wireframes. The resource was reported with an assigned specific gravity of 2.75 t/m<sup>3</sup>, derived from regional measurements of host rock units, to an approximate depth below surface of 90 metres.

Precise details of potential mining methods, operating costs and recoveries, as well as details of potential waste and process residue disposal options, are stated as being unclear due to the early stage of project evaluation. However, with 90% of the resources from depths less than 40 m the resources were considered amenable to open pit mining, and limited metallurgical testwork undertaken in the 1980's suggests recoveries of 80-85% were possible from gravity concentration.

Uncertainty with several data sets, including the assay data and bulk density measurements is reflected in the resource estimate being classified as Inferred under the JORC Code (2012).

Cut-off Grade	M Tonnes	Grade Sn %	Contained Tin (Kt)
0.1	5.2	0.2	10.4
0.2	1.3	0.3	3.9

Table 6-7. Great Pyramid Inferred Resources, November 2011 (Abbott, 2011)



# 7 GEOLOGICAL SETTING AND MINERALIZATION

#### 7.1 REGIONAL GEOLOGY

The Eastern Tasmanian Terrain consists of allocthonous Ordovician to Early Devonian quartz-wacke to pelitic turbidites known as the Mathinna Supergroup. These were multiply folded in the mid Devonian Tabberabberan Orogeny prior to being intruded by granitic to dioritic rocks of the Scottsdale and Blue Tier batholiths. The Mathinna Supergroup rocks are locally hornfelsed, forming contact metamorphic aureoles surrounding granitoid intrusions. The Eastern Tasmanian Terrain has many similarities with the Melbournian Zone of Central Victoria (Powell & Baillie, 1992) (Foster, Gray, Kwak, & Bucher, 1998).



Figure 7-1. Simplified Geology of North-east Tasmania, with TinOne Exploration Interests [TinOne, Aug 2023]

The Eastern Tasmanian Terrain was accreted to the Western Tasmanian Terrain during SW-NE compression in the first phase of deformation during the Tabberabberan Orogeny (Powell & Baillie, 1992) (Keele, 1995). This phase resulted in upright, tight SW verging folds in the east to recumbent and isoclinal SW verging folding in the west. The Terrain boundary is contentious but is thought to lie either in the Tamar Basin (Powell & Baillie, 1992) (Keele, 1995) or further west near the Rubicon River (Reed A. R., 2001). The second phase of deformation was associated with back thrusting, possibly as a result of structural lock up through continued NE-SW compression. This formed over printing upright folding and faulting (Keele, 1995) (Reed A. R., 2001). Mesothermal slate belt style gold mineralization is associated with this phase of deformation (Keele, 1995). Devonian granitic to dioritic plutons



intruded the eastern and western Tasmanian terrains significantly after the peak period of deformation.

Unconformably overlying these rocks are Permian to Triassic sediments, later intruded by an extensive Jurassic Dolerite Sill complex. These Permian to Triassic cover rocks have been largely eroded with remnants forming topographic highs such as Mt Arthur.

Tertiary sediments of rift valleys and incised streams have been partially covered by later Tertiary basalt flows. Basalts have filled paleo-topographic lows resulting in topographic inversion with erosion resistant basalts now forming low ridges. Quaternary sediments and scree form a thin veneer over the older stratigraphy in topographic lows.

# 7.2 PROPERTY GEOLOGY

The project area is underlain by rocks of the Mathinna Supergroup, a thick succession of turbiditic sandstones and mudstones.



Figure 7-2. Property Geology (TinOne, Aug 2023)



A revised stratigraphy for the Mathinna Supergroup included in the explanatory report for the MRT 1:25,000 map sheets used to produce the property geology map shown in Figure 7-2 is included as Figure 7-3 below.

Group	Formation	Member	Age	Brief description
	Sideling Sandstone	8	Early Devonian (plant fossils)	Dominantly fine-grained sandstone, some interbedded siltstone
Panama	Lone Star Siltstone		Late Silurian (graptolites)	Dominantly thin-bedded siltstone with interbedded fine-grained sandstone increasing towards the top
Group	Retreat Formation		Silurian?	Interbedded turbiditic medium to very fine-grained sandstone and subordinate siltstone-mudstone
	Yarrow Creek Mudstone		Silurian?	Dominantly thin-bedded mudstone, with subordinate cross-laminated siltstone
	7	Inferre	d faulted unconform	nable contact
	Turquoise		Early–Middle Ordovician (graptolites)	Phyllitic dark grey-black slate; recumbent folds and cleavage
Tippogoree Group	Bluff Slate	Industry Road Member	Ordovician?	Interbedded phyllitic slate and foliated very fine-grained sandstone; ridge-forming recumbent folds and cleavage
	Stony Head Sandstone		Ordovician?	Graded thick-bedded fine-grained turbiditic sandstone with minor interbedded pelite; large-scale recumbent folds and cleavage

Figure 7-3. Revised Stratigraphy for Mathinna Supergroup (Worthing & Woodward, 2010)

The eastern portion of the project area is comprised of rocks mapped as the Scamander Formation (Dpsf). These are massive sandstones with some distinctive, mappable mudstone-rich units. Poorly preserved remains of vascular plants, rugose corals, polyzoans, brachiopods, bivalves and crinoids, a conularid, orthocone cephalopods and abundant dacryoconarids all indicate an early Devonian age (Powell, Baillie, Conaghan, & Turner, 1993).

The western part of the tenement is underlain by late Silurian rocks of the Panama Group which are distinguished from the Scamander Formation on the basis that the whole package tends to consist of thinner-bedded sandstone with more abundant mudstone. Thicker sandstone beds are present towards the top of the formation. There is no fossil evidence of age in these rocks (Worthing & Woodward, 2010).

The sedimentological differences between the two packages are expressed in the structural settings, with the latter forming folds of shorter wavelength, chevron geometry and a more intense incidence of thrusting (Worthing & Woodward, 2010). The Great Pyramid deposit is hosted in the latter formation.

Locally, three separate packages have been recognised at deposit scale (Bull, 2023). Extensive silicification associated with mineralization generally entirely destroys all primary sedimentary textures, making sedimentological studies difficult.

(1) Dominantly silt/mudstone (DSM) facies

Carbonaceous siltstone/mudstone intervals comprise > 50% of section. There are usually some thin- to medium-bedded turbiditic sandstone interbeds, but massive intervals of carbonaceous silt/mudstone of several m's in thickness occur locally.

In the extensively silicified zones e.g. the intersection in the deep historic hole SPG1A, there are massive fine-grained chlorite zones that may be the altered equivalent of this facies or alternatively may just be zones of intense alteration.

#### (2) Interbedded thin- to medium-bedded sandstone and silt/mudstone (ISM) facies

This facies comprises thin- to medium-bedded sandstone turbidites with intervening carbonaceous siltstone/mudstone intervals comprising <50% of section.

It preserves numerous classical turbiditic features such as basal structures (lode casts, flames etc.), normal grading and Bouma A, B and C divisions and as a result generally provides numerous facing indicators.

# (3) Dominantly medium- to thick-bedded sandstone (DSS) facies

Amalgamated medium- to thick-bedded sandstone with <10% carbonaceous siltstone/mudstone interbeds that probably represent distributary channels within the turbidite system are clearly present in outcrop.

Most of the intervals interpreted as this facies in the core from the Great Pyramid area are silicified to some degree and these zones are the main host to the veins.

Some intervals do preserve primary textures indicative of thick-bedded sandstones (Figure 7-4, upper), however in other cases, intervals that have no primary textures preserved are assigned to this facies on the basis that they are pale in colour and there are no apparent silt/mudstone interbeds (Figure 7-4, lower).





Figure 7-4. DSS Facies Examples

Due to the difficulty in determining the protolith in the intensely silicified zones, this facies may be over interpreted because primary lithological characteristics preserved locally suggest, that under some circumstances, the silicification can overprint both of the other two facies identified which have a significant silt/mudstone component.

Based on comparison with a well documented Permian analogue (Grecula, 2003), the Siluro-Devonian Mathinna Group host succession to the Great Pyramid tin prospect is interpreted to comprise thick channel sandstone intervals within a mosaic of thinner-bedded and finer-grained channel margin and overbank deposits

Although the end member elements, the sandstone channels and the hemi-pelagic silt/mudstones, will have broadly lensoidal geometries, they likely had original lateral continuities of > 1km.

The tin mineralization is hosted in discrete zones within the channel sandstones, but significant zones of mineralization can also occur in sandy intervals within the interpreted channel margin facies.

A further division of the three facies into an informal stratigraphy in the immediate environs of the Great Pyramid deposit is shown in Table 7-1 (Reed A., 2023).


	EASTERN SEQUENCE	
8	Mixed Cyclic Sandstones/Mudstones	Upwardly fining sequences to >30 m thick, each cycle varying in proportions of sand to mud but ranging from a coarser-grained base of aggregated sandstone (>5 m), internally cycling up stratigraphy to predominantly (>80%) mudstone.
7	Mudstone	Predominantly (>50%) finely bedded (<5cm) mudstones and black shales (e.g., top of 22GPDD018). Less common (but better preserved) upwardly fining units to >10 m thick graded sandstones (beds typically <25cm thick.) Rare (<5%) units of aggregated sandstone.
	WESTERN SEQUENCE	
6	Upper Mudstone	Mudstone (>50%) with thinly bedded sandstone (typically thinly bedded [<10cm], rarely thicker and in places quartzitic or silicified).
5	Upper Sandstone	Blocky quartzitic sandstone, possibly only prominent in outcrop due to tectonic thickening (by folding). Otherwise, part of Unit 4.
4	Upper Mixed Sandstone	Sandstone (>50%), coarser, thicker and more abundant at the unit base. Beds are typically less than 0.4 m thick. Sedimentary structures (e.g., cross-bedding, load structures, scour) are common in core but rarely preserved in outcrop.
3	Aggregated Sandstone / Grit	Thickly bedded (to >1 m) commonly massive sandstone and less common poorly sorted grit (grains to 3mm diameter). Mudstones are rare as are sedimentary structures. Blocky outcrop and scree common at surface.
2	Lower Mixed Sandstone	Thinly bedded (<25cm) sandstone (~50%) and mudstone. Possibly transitional between the Lower Mudstone and Aggregated Sandstone.
1A	Quartzo-feldspathic sandstone in vicinity of Brocks	Underground may be a coarser-grained lens within the Lower Mudstone or Lower Mixed Sandstone brought to surface by folding (tight folding is common in the Lower Mudstone).
1	Lower Mudstone	Finely bedded (<5cm) shaley mudstones and rare thin (<10cm) beds of sandstone.

#### Table 7-1. Informal Stratigraphy of the MSG in the Vicinity of the Great Pyramid Deposit

At the Great Pyramid deposit, the sedimentary units of the MSG are folded about approximately NW-SE axes, with evidence that the deposit lies on the upright limb of a gently SE-plunging anticline with its hinge to the northeast. As can be seen in Figure 7-5 and Figure 7-6 below, the Pyramid Hill Fault (PHF) (Reed A. , 2023), a NW-striking thrust fault with a steep dip to the SW, transects the area and offsets the units of the MSG.

Table 7-1 and the deposit geology map below, Figure 7-5, show the Eastern Sequence at the property is stratigraphically simple with only two sedimentary units, while the Western Sequence comprises a larger number of variably competent units. As would be expected considering the differing geology, the style of folding varies either side of the fault, largely dependent on rock competency. Tighter and higher frequency folds develop in finer grained rocks whereas sandstones tend to deform by faulting. Fold complexity also appears to decrease away from the PHF, at least to the north-east.





Figure 7-5. Great Pyramid Deposit Geology [after Reed A., 2023]

The structure of the Great Pyramid deposit is characterized by:

- (1) Early NE-SW shortening with upright open to tight, rarely isoclinal folding, and NE-directed thrusting on generally steeply SW-dipping faults.
- (2) Later NE-SW shortening is followed by or transitions to later brittle wrench faulting and refolding on ENE-WSW- striking, NNW-dipping faults and fractures.

The two phases are not mutually exclusive and there is no clear demarcation between early and late deformation based on cross-cutting relationships in drill core or outcrop. Rather, there appears to be a transition from (1) regional deformation to (2) localized wrench faulting and deeper granite intrusion.

A youngest timing for deformation and mineralization is bracketed by intrusion of the ENE-striking dolerite dyke. This dyke is likely Devonian (Bottrill pers com.; internal company reports).

The dolerite dyke at Pyramid Hill occupies the same trend as the late tin-bearing fractures. It coincides with an apparent north-side-down (normal) offset of the stratigraphy to the SE and NW and sandier



units close to the dyke are commonly both more deformed and more altered. Alteration does not appear to extend into the dyke. However, the dyke is sparsely veined in places and the orientation of these veins is the same as those well developed in the adjacent altered sandstones. The dyke occupies structures formed during the latter phases of deformation (and tin mineralization) and may even be slightly affected by the waning stages of that same deformation.



Figure 7-6. Field Sketch Illustrating Gross Geometry of Deformation at Great Pyramid NB The sketch is stylized but shows an approximation of the positioning and geometry of lithological units 2,3,4 and 8 relative to thrust faults (red) and later brittle cross faults/fractures (green). (Reed A., 2023)

### 7.3 MINERALIZATION

The bulk of the tin mineralization at Great Pyramid occurs in veinlets developed along close spaced joints. The joints strike at about 070° and dipping at 60° to 70° to the northwest. The mineralized joints are relatively planar and constant in orientation. The mineralized joints (or ultra-narrow fissures) are 1 to 5 mm in width, rarely up to 10 mm. Joint density in the mineralized domain is generally greater than 80/m and up to 140/m in intensely mineralized areas. Joint spacing away from Great Pyramid is generally < 30/metre.

The mineralized joints exhibit quartzite/silicification envelopes of variable width but typically 1-2cm. In areas of intense jointing, the envelopes coalesce to form intensely silicified rocks, typically logged as quartzite.

Cassiterite (tin oxide) is present in the veins, generally with two or more of the following minerals: quartz, muscovite, fluorite, siderite, sulphides (arsenopyrite, pyrite, sphalerite, galena, chalcopyrite and/or their decomposition products scorodite and goethite), tourmaline and wolframite (at depth). There is no clear and constant association between cassiterite and any other mineral. Cassiterite grain sizes vary widely, from 5-10µ to 300-400µ (BHP, 1982).

Copper and related base metal mineralization is 'generally' associated with an earlier phase of veins and structures than those hosting tin.

Older sulphide and base metal veins strike parallel to the original regional fold trends. Mineralization is also in thrust faults and (in finer grained units) sulphide has formed along fold-related cleavage.

Base metal mineralization associated with folding is present in prospects and deposits nearby, including Orieco, South Orieco and Ringarooma. These deposits do not contain appreciable tin.

Early mineralized structures may be rotated and/or reactivated during latter fluid movement and so base metal and tin, while not thought to be of the same timing, are also not mutually exclusive.

Tin mineralization is most often associated with later ENE-striking, NNW-dipping fractures. Younger ENE-striking veins/fractures commonly offset older structures by up to a centimetre in core. They are mineralized micro-faults. Total offset spread across a zone of sheeted veins in more brittle units may be in the order of 10's of meters.

Veins are not so well developed in finer grained rocks for either mineralizing event. Fine grained rocks tend to deform through ductile means. Thus, tin-bearing fractures developed in folded sandstone may not necessarily continue along strike as fractures in to stratigraphically adjacent but finer-grained rocks. Rather, tin mineralization (as a body) will more likely follow the intersection defined by the latter zone of ENE-striking fracturing and the already folded stratigraphy.

It is a combination of, a) the rotation of SO early during folding, and b) the intersection of that rotated strata with the generally ENE wrench-style deformation that will dictate the plunge of linear shoots. Internally, these shoots will comprise ENE-striking sheeted veins.

There is some evidence that fault-controlled mineralization occurs along the Pyramid Hill Fault. The fault zone may be in the order of 3-5 metres wide, containing brecciated quartzites, sheared sandstone and shales. Silicification, sericitization and chloritization have been noted. A "primary" origin for the mineralization has been favoured (BHP, 1982) and implies that the fault predated the deposition of mineralization and hence was the probable conduit for fluids.

The Great Pyramid mineralization is currently known over a strike length of more than 500 metres with an average width of approximately 150 metres. The few deeper drill holes at Great Pyramid have encountered tin mineralization with a similar tenor to near surface mineralization at depths of approximately 300 metres below surface.

The tin systems of northeastern Tasmania are regarded as classical examples of granite-related tinpolymetallic systems (Taylor, 1979). Well known systems such as Anchor (Taheri & Bottrill, 2005) Aberfoyle, Lutwyche, Storeys Creek, Rex Hill and Royal George are hosted in, or directly associated, with Devonian granites of the S-type alkali feldspar suite and it is generally regarded that the granites are the source of hydrothermal fluids and metals for formation of the systems. In the Aberfoyle, Lutwyche and Story's Creek systems, the bulk of mineralization is hosted in Mathinna Supergroup sedimentary rocks above the granite body, with deeper mining levels and drilling demonstrating the connection. In these systems there is a clear zoning from tin-rich at higher levels above the granite,



downward to higher tungsten content adjacent to and within the granite. The Aberfoyle system is known over a vertical extent in excess of 300 metres.

It is highly significant that in most respects (mineralogy, metal association, alteration character), the Great Pyramid system conforms to the granite-related model, yet no granite has yet been encountered in the project area.

The TinOne 2022 drill program provided support for this model and the granite association of the Great Pyramid system with the key evidence being the consistent presence in deeper holes of spotted hornfels. However, despite drilling to depths of almost 400 metres below surface, no granite has yet been encountered at Great Pyramid. In the other Mathinna Supergroup hosted systems in Tasmania (e.g. Aberfoyle, Lutwyche, Story's Creek), mineralization continues to the granite contact and within the granite. By comparison (and in the context of the MRT gravity model and observed geology), it can be interpreted that the Great Pyramid system may extend for a significant distance below current drill levels and potentially continue into the interpreted underlying granite.

To summarize, the mineralization encountered to date at Great Pyramid is interpreted to have two inter-related control mechanisms (Figure 7-6).

- (1) Structure North-easterly striking, steeply dipping structures (TinOne observations, historical exploration reports by Aberfoyle Ltd and BHP Ltd) that transect the sedimentary package and are interpreted to have acted as conduits for mineralizing hydrothermal fluids arising from the granite at depth.
- (2) Sedimentary rock type Not all the sedimentary sequence is equally favourable for the production of elevated tin grades and therefore certain units are more strongly mineralized. These units tend to be the more quartz-rich sandstone parts of the sequence and it is interpreted that their brittle fracture patterns within the favourable structural domains promotes mineralization. A challenge is that the Mathinna Supergroup sedimentary rocks were strongly folded at a time before intrusion of the granite magma and formation of the related mineralization.

The interaction of the folded sedimentary geometries, structural zones and interpreted granite is schematically shown in Figure 7-7. The figure highlights the potential geometries and relationships expected at Great Pyramid and illustrates why in some places the mineralization is more laterally continuous than in other places. The figure also illustrates that, based on knowledge from other deposits in northeastern Tasmania, mineralization could be expected to continue in favourable host rocks into the interpreted granite contact.





Figure 7-7. Great Pyramid Conceptual Model (TinOne 2023)

# 8 DEPOSIT TYPES

Tin (± tungsten) mineralization in Tasmania comprises a diverse range of hard rock deposit styles. All deposit styles have a close spatial and genetic association to the upper parts of felsic and fractionated granitoid plutons (Blevin, 1998). Massive greisen, skarn, carbonate replacement, vein and stockwork tin deposit styles are all present in Tasmania.

Grade/tonnage relationships for potentially economic Sn±W systems range from >1% Sn for hydrothermal vein deposits (eg Aberfoyle, NE Tasmania), 0.3-0.5% Sn in massive greisen deposits (eg Anchor, NE Tasmania) to 0.1-0.3% Sn in stockwork deposits (eg Great Pyramid, NE Tasmania and Taronga, NSW).

The Great Pyramid deposit is a sheeted vein or stockwork deposit (Figure 8.1) within a sandstonedominated sedimentary package above a postulated ridge of granite at depth (>500 metres) (Bombardieri & Duffett, 2023). The deposit is located within the Scamander zoned mineral field. Northwest of Great Pyramid, at shallower depths above the underlying granite, several tungsten prospects occur, while further to the north and east, copper, lead and zinc prospects occur.

Tin is present as cassiterite in fracture veins with a gangue of quartz, muscovite, sulphide, carbonate, and tourmaline. The broad alteration halo at Great Pyramid is defined by elevated bismuth (>1ppm), caesium (>20ppm) and lithium (>100ppm) which is consistent with fluids evolving from a "tin" granite.





Figure 8-1. Deposit Model for Great Pyramid (after Blevin, 1998)



## 9 **EXPLORATION**

### 9.1 **GEOPHYSICS**

In July 2021, the company engaged Khumsup Geophysics to carry out an offset pole-dipole induced polarization (IP) survey across the main mineralization at Great Pyramid to attempt to delineate mineralization and structure below the shallow oxide resource. Approximately 6.1-line kms of data were acquired. The survey consisted of three receiver and two transmitter lines and was completed in early July. Data acquired were sent to an independent geophysical consultant to quality control the data, clean and carry out a 3D inversion. A follow-up offset pole-dipole IP survey, to better delineate significant chargeability anomalies that were identified in the IP survey, was carried out in December 2021. The follow up survey extended the coverage to the north-east of the main mineralization at Great Pyramid, with approximately 4-line kms of data acquired utilizing three receiver and two transmitter lines.



Figure 9-1. Offset Pole-Dipole Induced Polarization Survey Location Plan [TinOne, Aug 2023]

### 9.2 SPECTRAL GEOLOGY

The company engaged Mineral Resources Tasmania (MRT) to acquire spectral data for diamond drill hole SPG1A using the MRT's HyLogger. Data was acquired for both the shortwave infrared range (SWIR) and the thermal infrared range (TIR), as well as core photography. SPG1A was the deepest hole drilled at Great Pyramid until TinOne Resources' 2022 drill campaign. It was intended to intercept the underlying granite, but deviated significantly in the percussion pre-colla,r and veered away from the main mineralization zone. SPG1a did intercept a zone of tin mineralization at depth with approximately 42.9 metres at 0.22% tin from 236.7 metres. Data was acquired for the entire cored



interval, from 120 to 320.5 metres down hole, and comprised ~ 67,000 readings at 3mm intervals. Data was also acquired for 18GPD001, from 1.5 to 320.5 metres down hole, and comprised ~ 95,000 readings at 3mm intervals. Data reduction and processing was carried out at Mineral Resources Tasmania.

### 9.3 STRUCTURAL GEOLOGY

Dr Alistair Reed was engaged to develop a structural model for the Great Pyramid tin deposit (Reed A. , 2023). Dr Reed utilized historic drill core from the MRT core library (14 drill holes), core drilled by TinOne in 2022 (7 drill holes) and field mapping at Great Pyramid. The purpose of the work was to provide an improved geological model of the structure and mineralization at Great Pyramid to underpin estimation of a Mineral Resource. Dr Reed created four cross sections and two new maps through the deposit.

## 9.4 SEDIMENTOLOGY AND CHEMOSTRATIGRAPHY

The company engaged Dr Stuart Bull of Basin Solutions Pty Ltd geological consulting company to investigate whether sedimentological logging of the Siluro-Devonian Mathinna Supergroup (MSG) host succession to the Great Pyramid tin prospect could help to understand the controls on the mineralization, and thereby guide exploration activities. Dr Bull completed detailed facies logging of six diamond cored holes drilled by the issuer during 2022: 22GPDD001A, 22GPDD008, 22GPDD010, 22GPDD015, 22GPRC006 and 22GPRC014.

Dr Bull also use multi-element assay data to investigate the chemostratigraphic signature of the sedimentary facies with a view to helping determine the protolith in the strongly altered rocks. A review of chemostratigraphic indicators using low detection limit multi-element assay data acquired from drill samples in 2022 was undertaken by Dr Scott Halley of Mineral Mapping P/L and provided to Dr Bull.

### 9.5 PETROLOGY

The company engaged the Mineral Resources Tasmania petrologist, Ralph Bottrill, to carry out petrology work on 16 samples of drill core from Great Pyramid. Polished thin sections were made at the University of Tasmania. All samples were taken from diamond cored holes drilled by previous explorers.

Hole ID	Depth (m)	Lithology
18GDP001	58.1	Dolerite dyke
18GDP001	67.6	Sandstone and quartz weathered sulphide veins
18GDP001	124.3	Sandstone and quartz muscovite-sulphide veins
18GDP001	129.2	Sandstone and quartz cassiterite-sulphide veins
18GDP001	140.1	Sandstone and quartz cassiterite-sulphide veins
18GDP001	145.6	Sandstone and quartz chlorite veins
18GDP001	187.0	Sandstone and quartz cassiterite-sulphide veins
18GDP001	205.1	Sandstone and quartz cassiterite-sulphide veins
18GDP001	224.6	Sandstone and quartz cassiterite-sulphide veins
18GDP001	246.6	Sandstone and quartz cassiterite-sulphide veins
18GDP001	299.1	Sandstone and quartz cassiterite-sulphide veins
DDS1	154	Quartz carbonate sulphide vein in silicified sandstone
DDS1	203	Sulphide-rich sandstone
DDS1	218	Quartz carbonate sulphide vein in silicified sandstone

#### Table 9-1. Petrology Sample Details



Hole ID	Depth (m)	Lithology
MD1	122	Chloritic silicified sandstone with quartz chlorite veining
MD1	150	Silty pelite

### 9.6 **RESULTS**

#### 9.6.1 Offset pole-dipole induced polarization.

Offset pole-dipole IP surveys completed in 2021 delineated two significant IP chargeability anomalies and a ridge of high resistivity that persists to depth just to the east of the main mineralized area at Great Pyramid and southwest of the two IP chargeability anomalies.



Figure 9-2. Modelled IP Isosurfaces Looking West from Above [TinOne, Aug 2023] 2022 diamond core drilling targeting IP anomalies (black traces). Historical resource drilling in blue, TinOne 2022 resource drilling in red. 2500ohm resistivity isosurface in purple, 80 mV/V chargeability anomaly in grey. Scale in metres.





Figure 9-3. Modelled IP Isosurfaces Looking South-West with Modelled Granite Surface [TinOne, Aug 2023] 2022 diamond core drilling targeting IP anomalies (black traces). Historical resource drilling in blue, TinOne 2022 resource drilling in red. 2500ohm resistivity isosurface in purple, 80 mV/V chargeability anomaly in grey. Modelled regional granite surface supplied by MRT. Scale in metres.

The larger IP chargeability anomaly (>50 mV/V) was targeted with drill hole 22GPRC010, which was drilled to 450 metres. The drill hole intersected a zone of increased disseminated sulphide, including chalcopyrite, however the sheeted veins that are associated with tin mineralization at Great Pyramid were not observed. The core was assayed as 4 metre composites. No significant intervals of mineralization were identified. Increased disseminated pyrite in the core was observed to correlate with the zone of increased IP chargeability.

The chargeability anomaly to the east of Pyramid Hill (>50 mV/V) is associated with a historical prospect, the Ringarooma Prospect, which may represent the surface expression of mineralization associated with this anomaly. The prospect is described as "...a few trenches on silicified gossanous outcrops". Drill hole 22GPRC18A was pre-collared to 102.4 metres then cored to 278.3 metres. The core was assayed in four metre composite lengths. No significant mineralization was identified.

Drill hole 22GPDD023 (398 metres) was designed to test the resistivity high to the north-east of the main mineralization at Great Pyramid. The resistivity anomalies at Great Pyramid have been considered to potentially represent a granitic intrusive, perhaps an aplite, but no granitic rocks have been encountered in any drill hole at Great Pyramid. Modelling supplied by MRT indicates that the depth to granite may be >700 metres. The core was assayed in four metre composite lengths. No significant mineralization was identified.

# 9.6.2 Spectral Geology

Spectral data from 18GPD001 (Figure 9-4) revealed an apparent correlation between a higher ratio of phengitic white mica to muscovitic white mica through the mineralized intervals compared to the unmineralized zones, particularly in the upper part of the hole. There is also an apparent lack of chlorite in the mineralized intervals, however, this may be a function of lithology with mineralization preferentially developed within the more arenitic units rather than in the pelites.

The spectral data from SPG1a is not as clear cut in defining the mineralized interval as having a higher phengite/muscovite ratio but there is a distinctive change in ratio at the margin of the mineralized zone both above and down hole (Figure 9-5). The phengite/muscovite ratio decreases markedly over



a down hole length of 10 metres or so on either side of the mineralized zone. This change is similar to what is seen in 18GPD001. It is not yet clear what is causing the change.



Figure 9-4. Drill Hole 18GPD001 - SWIR Spectral Data for White Mica Group and Tin Content Versus Depth



Figure 9-5. Drill Hole SPG1a - SWIR Spectral Data for White Mica Group and Tin Content Versus Depth

### 9.6.3 Structural Geology

The following summary of the significant findings of the review of the structural setting of mineralization at Great Pyramid is taken from Dr Alistair Reed's report.

Turbidites hosting Great Pyramid were tightly folded and thrust (top to the NE), then subsequently wrenched. Copper (base metal) mineralization is associated more with structures that formed earlier during folding, and tin with structures that formed later during wrenching.

Tin mineralization is hosted with ENE-striking sheeted vein system. However, these sheeted veins are developed primarily in brittle sandstones. Adjacent finer-grained rocks deformed more by ductile means. Drilling historically targeted sheeted veins, but it is the 'intersection' of the ENE-striking



wrench structures with the prospective sandstone stratigraphy that is the real target. As an intersection, mineralization is not planar but linear (or shoot-like).

It is only inside these shoots (within the confines of the sandstones) that mineralization is contained within ENE-striking sheeted vein systems.

The prospective sandstone stratigraphy is folded and intersects the late wrench structures at multiple levels and orientations. This creates the opportunity for multiple tin mineralized shoots.

Shoots will be located by:

- a) Identifying the location where packages of sandstone intersect the late ENE-striking (wrench) fracture zones.
- b) Calculating the orientation of the shoot by estimating the intersection between the late ENEstriking / NNW-dipping fracture zones and the dip of the intersecting sandstone package.

The Pyramid Hill Fault thrust fault bisects the prospective geology in vicinity of Great Pyramid (Figure 7-6). The coarsest grained and most prospective sandstones for mineralization west of this fault are predicted to sit at depth east of the Great Pyramid Fault. These sandstones east of the Pyramid Hill Fault have not yet been intersected in drilling. They are deeper but are also likely located closer to the tin source and are a target for additional resources into the future.

## 9.6.4 Sedimentology and Chemostratigraphy

Based on comparison with a well-documented Permian analogue, the upper Devonian Mathinna Supergroup (MSG) host succession to the Great Pyramid tin prospect is interpreted to comprises thick channel sandstone intervals within a mosaic of thinner-bedded and finer-grained channel margin and over bank deposits.

Although the end member elements, the sandstone channels and the hemi-pelagic silt/mudstones, will have broadly lensoidal geometries, they likely had original lateral continuities of > 1km and should therefore be suitable as marker horizons to allow the erection of a prospect scale stratigraphy.

The three identified facies are:

- dominantly silt/mudstone (DSM) facies
- interbedded thin- to medium-bedded sandstone and silt/mudstone (ISM) facies
- dominantly medium- to thick-bedded sandstone (DSS) facies.

The tin mineralization is hosted in discrete zones within the channel sandstones (DSS), but significant zones of mineralization can also occur in sandy intervals within the interpreted channel margin facies (ISM).

An initial attempt at chemostratigraphy suggests that:

- Intervals with Al assay values dominantly <40,000ppm, supported by relatively low Nb and V, are interpreted as the DSS facies.
- Intervals with V assay values dominantly >100ppm, supported by elevated Al and Nb, are interpreted as DMS facies.

### 9.6.5 Petrology

The primary purpose of the petrology work was to provide a reference work with high quality thin section images and descriptions of veins (mineralized and unmineralized) through the main deposit area. Previous substantial petrology work was carried out in the 1980s, but no quality images have survived.



Important tin-bearing veins identified in this work are:

- Quartz-±carbonate-±muscovite-cassiterite-sulphide; with sulphides comprising arsenopyrite, galena, chalcopyrite, sphalerite, pyrite and possible stannite.
- Quartz-tourmaline-cassiterite-sulphide; with sulphides comprising pyrrhotite, sphalerite, arsenopyrite and chalcopyrite.

Future petrology work will look at other base-metal mineralized veins that are devoid of tin or have minor amounts but may be important in understanding the paragenesis of the deposit. In particular, there are veins with significant sphalerite and intervals of several metres with >1% zinc content encountered in drilling.



### **10 DRILLING**

A total of 214 drill holes (13,916.7 m) have been drilled at the Great Pyramid Prospect, of which the early 1965 BHP open hole percussion (PCD) drilling (23 holes for 842.95 m) has unreliable assays and is not used in creation of this mineral resource estimate. TinOne has added and drill tested historic holes with 13 diamond core holes for a total of 2558.8 m and 23 reverse circulation holes for a total of 2,139.7 m at the property in 2022.

## **10.1 DRILLING METHODS**

Year Drilled	Exploration Company	Drill Type	Count	Total Drilling (m)
1964	BHP	DD	1	243.32
1965	BHP*	PCD	23	842.95
1970	Paringa-Aberfoyle	DD	6	671.32
1970	Paringa-Aberfoyle	PCD	135	4695.48
1976	Mines Dept	DD	1	215.7
1977	Mines Dept	DD	2	340
1978	Mines Dept	DD	1	154.3
1980	BHP	DD	5	446.68
1981	BHP	DD	8	782.01
1983	Billiton	DD	2	505.9
2018	TNT Mines	DD	1	320.5
2022	TinOne	DD	6	1499.7
2022	TinOne	RC	16	1259.5
2022	TinOne	RC/DD	7	1939.3

Table 10-1. Number of Holes and Metres by Drilling Methods

BHP\*: The percussion holes drilled in 1965 are not used to define the mineral resource.

### 10.1.1 Diamond Coring

TinOne drilled 13 diamond cored holes on the property in 2022 for a total of 2558.8 metres. Seven holes had reverse circulation pre-collars for a total of 880.2 metres. Three of the diamond cored holes, 22GPDD010, 22GPRC018A and 22GPDD023, were targeted at geophysical targets distal to the mineral resource area and are not material to the resource estimate.

Two diamond drill rigs were on site during the program. A Boart Longyear LF70 operated a day shift only with a driller and one offsider present and drilled from 21 April to 05 August. An Atlas Copco CS1000 P4 operated predominantly with a day and night shift, commencing on 19 May and finishing on 07 December. The LF70 was relatively easy to move around the steep topography at Pyramid Hill as it is designed to be carried by a Morooka (a small, tracked utility vehicle). The P4 required a 20tonne excavator to move and manoeuvre it into place.

Diamond coring was relatively slow at Great Pyramid, particularly with the P4 rig. The strong silica alteration within the predominant sandier units has caused very strong induration of the rock leading to slow penetration rates. Productivity was also affected by the azimuth of the holes, which were drilled predominantly down dip at shallow angles to bedding resulting in short runs to prevent core loss. Additionally, and as reported from historical drilling programs, there was a loss of water return at shallow depths in every diamond hole drilled from surface. There was no water return from any reverse circulation pre-collared diamond cored holes either. The LF70 averaged approximately 16 metres per shift and the P4 averaged less than 10 metre per shift.



Holes were drilled in HQ3 size as much as possible to maximise sample recovery and core volume for assaying. Approximately 2,058 metres was drilled in HQ3 size and 458 metres in NQ3 size.

Hole ID	Easting (GDA94)	Northing (GDA94)	Azimuth	Dip	Depth (metres)	Pre-collar depth (metres)	Sampled interval (metres)
22GPDD001	599638.7	5413521.9	0	-90	42.1	NA	Unsampled
22GPDD001A	599638.5	5413522.7	0	-90	209.5	NA	0 to 209.5
22GPRC003	599484.3	5413644.5	129	-60	434.5	98	1 to 434.5
22GPRC004	599700.1	5413522.2	141	-60	290.1	127	0 to 290.1
22GPRC005	599814.3	5413462.7	140	-60	198.8	145	0 to 198.8
22GPRC006	599844.3	5413434.7	140	-60	263.5	145	1 to 263.5
22GPDD008	599595.0	5413385.3	136	-60	200	NA	2 to 200
22GPDD010	599985.0	5414250	133	-70	449.9	NA	0 to 449.9
22GPRC014	599713.8	5413495.8	163	-60	252.4	123.8	0 to 252.4
22GPDD015	599591	5413388	320	-60	200.5	NA	0 to 200.5
22GPRC018A	600343.8	5413301.4	45	-61	279.3	102.4	0 to 279.3
22GPRC021	599621.4	5413592.4	356	-65	220.7	139	0 to 220.7
22GPDD023	599816.5	5413790.6	136	-70	398.2	NA	0 to 398.2

Table 10-2. Drill Data for TinOne's 2022 Diamond Cored Program

# **10.1.2** Reverse Circulation

TinOne drilled a total of 23 reverse circulation holes for a total of 2,139.7 metres. Seven of these holes had diamond tails. Hole 22GPRC007A was an attempt to redrill hole 22GPRC007, which was stopped due to jamming, and it also failed and was not sampled. Holes 22GPRC020, 020A and 020B all failed at shallow depths and the target was drilled from a nearby location by 22GPRC021. Reverse circulation drilling commenced on 26 April and the program was completed on 11 July.

The RC rig was track mounted with a truck-mounted support unit carrying the main compressor. The track-mounted rig was relatively manoeuvrable around the steep hillside, but the support truck was restricted in its movements, necessitating a long bull hose connecting the main compressor to the drill rig for some holes. Drill site moves were therefore relatively slow.

Holes were drilled with a variety of bit sizes ranging from 125 mm to 132 mm. The indurated nature of the geology resulted in very slow penetration rates and high bit wear with frequent bit changes. The overall productivity rate was approximately 40 metres per day.



Hole ID	Easting (GDA94)	Northing (GDA94)	Azimuth	Dip	Depth (metres)	Sampled interval (metres)
22GPRC002	599414.0	5413654.7	136	-60	97	1 to 97
22GPRC007	599880.6	5413395.3	90	-60	23	1 to 23
22GPRC007A	599881	5413400	99	-60	13	Unsampled
22GPRC009	599761.3	5413443.0	144	-61	118	0 to 118
22GPRC011	599553.6	5413639.8	314	-61	139	0 to 139
22GPRC012	599561.8	5413630.8	139	-60	139	0 to 139
22GPRC013	599731.7	5413498.7	0	-90	115	0 to 115
22GPRC016	599829.7	5413454.3	0	-61	145.5	0 to 145.5
22GPRC017	599789.4	5413455.2	152	-60	150	0 to 150
22GPRC018	600338.9	5413301.8	70	-60	36.5	Unsampled
22GPRC019	600199.6	5413437.7	71	-60	148.5	0 to 148.5
22GPRC022	599877.4	5413394.6	104	-60	37	21 to 37
22GPRC024	599877.6	5413499.4	62	-60	73	0 to 73

#### Table 10-3. Drill Data for TinOne's 2022 Reverse Circulation Program

#### **10.2 SURVEY**

Collar location surveys were originally made by handheld GPS. At the completion of the program, an independent survey company, Woolcott Surveys and East Coast Surveying, carried out a real time kinematic survey (RTK GNSS) of drill collars, to an accuracy of at least 1 centimetre. All collars were recaptured except for 22GPDD010 and 22GPDD015. 22GPDD010 is not material to the resource estimate, Hole 22GPDD015 shows near surface mineralisation at the northern edge of the deposit.

Downhole survey data was acquired by the drilling contractor at the time each hole was drilled.

Down hole dip and azimuth data for the diamond coring program were acquired by either a Boart Longyear Tru Shot multi-shot survey tool or by an Axis Mining Technology Champ Navigator gyroscopic survey tool.

All downhole dip and azimuth data for the reverse circulation program was acquired by an Axis Mining Technology Champ Navigator gyroscopic survey tool.

#### **10.1 CORE HANDLING PROCEDURES**

Diamond core was transferred to appropriately sized core trays by the driller's offsider at the drill site. The core trays were numbered sequentially on site. Core blocks were inserted by the offsider or the driller at the end of each run and where there was core loss. Filled core trays were collected from the drill site by TinOne personnel and taken to the TinOne core shed in Fingal.

At the core shed, the core trays were laid out on racks and marked with the hole number and the interval. Core recovery measurements were carried out by suitably trained TinOne personnel, and the core marked at one metre intervals for geological logging. Geological logging was carried out by qualified TinOne geologists.



### **10.2 RECOVERY AND QUALITY**

The core recoveries varied from 94% to 100%. Compared to historical cored drilling these recoveries are significantly better. The good recoveries can be attributed to the use of HQ3 diameter drilling couple with slow penetration and short core runs. The down dip direction of drilling at a shallow angle to bedding has resulted in significant intervals of core being broken or splintered but has not affected the overall recovery. Core recovery data is shown in **Error! Reference source not found.** below.

Hole ID	Total core run length (m)	Total core recovered (m)	Calculated recovery	RQD length (m)	RQD
22GPDD001	42.1	41.6	99%	5.36	13%
22GPDD001A	209.5	205.5	98%	105.3	50%
22GPRC003	336.2	332.9	99%	228.7	68%
22GPRC004	163.8	160.3	98%	114.5	70%
22GPRC005	53.8	50.6	94%	30.7	57%
22GPRC006	118.5	117	99%	77.4	65%
22GPDD008	200.0	197.9	99%	98.41	49%
22GPDD010	449.9	440.5	98%	343.6	76%
22GPRC014	129.8	129.8	100%	93.4	72%
22GPDD015	200.5	198.94	99%	72.99	36%
22GPRC018A	176.9	166.2	94%	55.1	31%
22GPRC021	82.5	81.9	99%	40.3	49%
22GPDD023	398.2	397.6	100%	257.6	65%

T 1 40 4 0 D		
Table 10-4. Core Recov	ery Data for TinOne	's 2022 Diamond Coring Program

Recoveries from reverse circulation drilling ranged from 87% to 93%. Drilling conditions were generally consistent and there was no significant water encountered in any of the drill holes. Virtually all samples were dry, with only a few moist samples. Sample weights were controlled to a certain extent by the frequent changes in bits due to hard ground conditions.

Hole ID	Estimated recovery	Average sample weight (kg)	Number of samples	Standard deviation
22GPRC002	89%	30.9	95	5.0
22GPRC003	91%	31.1	96	5.8
22GPRC004	89%	28.8	125	4.2
22GPRC005	90%	29.0	143	4.6
22GPRC006	85%	30.1	143	5.3
22GPRC007	90%	32.0	20	3.9
22GPRC009	88%	31.4	97	4.9
22GPRC011	87%	30.9	137	5.8
22GPRC012	89%	31.9	137	5.3
22GPRC013	93%	31.9	113	5.0
22GPRC014	89%	31.7	121	5.3
22GPRC016	87%	30.9	143	5.5
22GPRC017	92%	32.3	148	6.0
22GPRC021	91%	32.7	136	5.2
22GPRC022	92%	32.2	16	4.3
22GPRC024	90%	31.2	71	5.0

#### Table 10-5. Reverse Circulation Recovery Data for TinOne's 2022 Program





Figure 10-1. Location Plan TinOne 2022 Drilling on Colour Relief Derived from Lidar [TinOne, Aug 2023]

### 10.3 RESULTS

The 2022 program was designed to:

- Test the depth and lateral dimensions of mineralization within the vicinity of the historical drilling and resource estimate.
- Obtain grade and continuity data utilizing modern drill and analytical techniques, within the area of the historic exploration activity.
- Test a large-scale IP chargeability anomaly adjacent to the historic resource.

**Error! Reference source not found.** presents full results from the 2022 program, with compiled results from all historical drilling known from the Great Pyramid area included in **Error! Reference source not found.**. The tables show that the 2022 program returned results in line with historical data and includes outstanding intersections of higher grade such as:

- 22GPRC012: 78 metres @ 0.51% Sn
- 22GPRC016: 51 metres @ 0.29% Sn
- 22GPRC021: 14 metres @ 0.36% Sn



## • 22GPRC022: 15 metres @ 0.45% Sn

The 2022 Great Pyramid drill program was successful in confirming the presence and tenor of significant tin mineralization in the area of historical drilling activity and historical resource estimate. The weighted average tin grade for all 2022 recorded intersections was 0.23% Sn, which is in accord with historical drilling (Error! Reference source not found.).

In addition, the program successfully defined significant mineralization at depth below the historical resource estimate in the area of sparse historical drilling. Highlights at depth included:

- 22GPRC003: 18 metres @ 0.31% Sn from 308 metres downhole 5.4 metres @ 0.46% Sn from 330.6 metres downhole 13 metres @ 0.22% Sn from 359 metres downhole
- 22GPRC006:
  49 metres @ 0.17% Sn from 65 metres downhole (including 8 metres @ 0.3% Sn from 86 metres downhole)

These TinOne drill holes and the historical data have not defined the lower limit of the system, which remains entirely open at depth.

A relatively minor component of the program was directed to testing the lateral extent of mineralization due to access, with the network of historical drill access tracks being utilized to obtain a more cost effective drill program for this first round of drilling. However, despite this, the program has also delivered significant results laterally away from the historical drilling and resource estimate, with highlights including:

- 22GPRC021 (see Company news release January 18, 2023): 40 metres @ 0.13% Sn from 58 metres downhole 14 metres @ 0.36% Sn from 128 metres downhole 17 metres @ 0.21% Sn from 181 metres downhole
- 22GPRC002 (see Company news release June 29, 2022): 14 metres @ 0.18% Sn from 3 metres downhole
   6 metres @ 0.22% Sn from 24 metres downhole

These drill holes and historical drill data have not defined the lateral limits of the Great Pyramid system, which remains open laterally in all directions.

Four drill holes (22GPDD010, 22GPRC018A, 22GPRC019, 22GPDD023) were drilled (for a total of 1275.9 metres) to test IP chargeability anomalies to the northeast and east of the area of historical exploration activity. These holes intersected sedimentary rocks of the Mathinna Supergroup with strong hornfels effects at depth and variable amounts of pyrite (interpreted to be both diagenetic and hydrothermal) and minor base metal sulphides. No significant tin mineralization was encountered. The chargeability anomalies may be explained by the presence of pyrite, however more detailed analysis, including petrophysical property measurements, will be undertaken and integration into the broader Great Pyramid geological model undertaken.



Hole	Intersection width (down	From (m)	Sn (%)	Comments
	hole m)			
22GPDD001A	23	0	0.23	Diamond cored hole. Inside historical resource area.
	26	29	0.22	Diamond cored hole. Inside historical resource area.
	11	61	0.45	Diamond cored hole. Inside historical resource area.
	8	120	0.28	Diamond cored hole. Inside historical resource area.
	5	148	0.38	Diamond cored hole. Below historical resource area.
22GPRC002	14	3	0.18	Outside historical resource area.
	6	24	0.22	Outside historical resource area.
22GPRC003	39	3	0.25	Inside historical resource area.
Incl	16	18	0.34	
	18	308	0.31	Diamond tail. Below historical resource area.
	5.4	330.6	0.46	Diamond tail. Below historical resource area.
	13	359	0.22	Diamond tail. Below historical resource area.
	14.1	379.15	0.15	Diamond tail. Below historical resource area.
	6.2	398.8	0.12	Diamond tail. Below historical resource area.
	7.15	420.85	0.16	Diamond tail. Below historical resource area.
22GPRC004	17	41	0.13	Outside historical resource area.
	8	243	0.15	Diamond tail. Below historical resource area.
22GPRC005	30	8	0.26	Inside historical resource area.
	23	64	0.12	Below historical resource area.
22GPRC006	9	48	0.20	Below historical resource area.
Incl	8	86	0.30	
	49	65	0.17	Diamond tail. Below historical resource area.
	29	160	0.15	Diamond tail. Below historical resource area.
	6	238	0.27	Diamond tail. Below historical resource area.
	13.5	250	0.14	Diamond tail. Below historical resource area. To end of hole.
22GPRC007	21	2	0.30	Inside historical resource area, to end of hole, abandoned in old
22000000	0		0.20	WORKINgs.
22GPDD008	8	4	0.20	Diamond cored hole. Inside historical resource area.
	14	24	0.20	Diamond cored hole. Inside historical resource area.
	15	134	0.15	Diamond cored hole. Outside historical resource area.
2260000	4	1/1	0.25	No significant minoralization
22GFRC009				Diamond corod hole. No significant minoralization
22GPDD010	C C	1	0.41	Bradominantly outside historical resource area
ZZGFRCUII	25	12	0.41	Predominantly outside historical resource area
	7	12	0.10	Predominantly outside historical resource area
	, Д	82	0.30	Predominantly outside historical resource area
22GPBC012	78	11	0.40	Predominantly outside historical resource area
	23	3/	1.09	Outside historical resource area
	8	122	0.27	
22GPRC013	20	3	0.27	Inside historical resource area
22011(0015	14	36	0.14	Below historical resource area
	6	105	0.10	Below historical resource area
22GPRC014	5	16	0.15	Inside historical resource area
22011(0014	12	26	0.27	Inside historical resource area
	48.8	87	0.20	Outside historical resource area Part RC part diamond tail
	5	171	0.13	Diamond tail. Outside historical resource area
22GPDD015	48	12	0.15	Diamond hole Predominantly within historical resource area
Incl	3	34	0.68	
22GPRC016	51	2	0.29	Inside historical resource area.
Incl	20	4	0.43	
22GPRC017	9	39	0.20	Outside historical resource area.
	11	66	0.10	Outside historical resource area.
22GPRC018A				No significant assays – diamond tail vet to be assaved.

### Table 10-6. TinOne Resources Great Pyramid 2022 RC and Core Drill Results



Hole	Intersection width (down hole m)	From (m)	Sn (%)	Comments
22GPRC019				No significant assays
22GPRC021	40	58	0.13	Outside historical resource area.
	14	128	0.36	Outside historical resource area. Part RC, part diamond tail.
	17	181	0.21	Outside historical resource area.
22GPRC022	15	22	0.45	Inside historical resource area, to end of hole, abandoned in old workings.
22GPDD023				Diamond cored hole. No significant mineralization.
22GPRC024	21	16	0.22	Inside historical resource area.
	14	47	0.10	Inside historical resource area.

NOTES: All intersections are calculated with a cut-off grade of 0.1% Sn with maximum consecutive internal waste of 4 metres. All intersections are downhole widths, true widths are uncertain.

TinOne drill hole numbering is in the form 22GPRCXXX for reverse circulation (RC) holes and 22GPRDDXXX for diamond holes with numbering allocated in sequence.

Analytical results have been received for all holes. Hole 22GPRC020 failed at 12 metres and was not assayed. The target area for this hole was drilled by 22GPRC021.

# 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

### 11.1 SAMPLE PREPARATION – DIAMOND CORE

Diamond core was halved with a diamond saw and sampled over nominal one metre intervals (~87%), with sample lengths ranging from 0.2 to 2.3 metres in length. Shorter lengths represented RC changeover intervals, significant lithology changes or core loss intervals. A long, very poorly mineralized section of 22GPRC003 was sample at nominal 2 metre intervals. The core cutting was undertaken by TinOne field staff under the supervision of a TinOne geologist.

### **11.2 SAMPLE PREPARATION – RC**

RC holes were sampled over one metre intervals with bulk samples collected from a rig mounted cyclone. The majority of samples were dry, with only a few damp samples.

All intervals were selected for assaying with the exception of some failed holes which were subsequently redrilled or relocated. An onboard rotary splitter sub-sampled the bulk sample to a nominal 2 kilogram sub-sample collected into a pre-numbered calico bag. Only a few resource composites were collected by spearing or by trowel.

Total sample material recovered for most intervals was weighed. A sub-sample from each interval was collected in a chip tray for geological logging.

### **11.3 SAMPLE SECURITY**

Calico bag assay sub-samples from RC drilling were collected in heavy-duty polywoven plastic bags which were sealed at the drilling site and stored in a TinOne vehicle before being transported either to the Suncoast Express depot in St Helens or to the TinOne field base in Fingal for temporary storage before delivery to Suncoast Express in St Helens. At the Suncoast Express depot in St Helens, the samples were loaded onto pallets and wrapped with pallet wrap. The St Helens depot is a secure location and is locked outside working hours. Palletized samples were forwarded to Suncoast Express in Launceston and then onforwarded to ALS Brisbane.

Diamond core samples were collected from site by TinOne personnel and taken to the TinOne core shed in Fingal. The core shed is a locked facility with access only available to TinOne personnel, the caretaker and the shed owner. Drill core was sampled at the core shed and placed in pre-numbered calico bags. Calicos bags were placed in polywoven sacks and then delivered to the Suncoast Express base in St Helens, where they were palletized and wrapped with pallet wrap, or delivered directly to ALS Burnie. Sample batches that were lodged with Suncoast Express in St. Helens were forwarded to Suncoast Express in Launceston and the either onforwarded by road freight to ALS Burnie or ALS Brisbane.

#### **11.4 SAMPLE ANALYSES**

All sample preparation and assaying were undertaken by ALS with sample preparation at either ALS Burnie, Tasmania or ALS Brisbane, Queensland. One batch of sample preparation occurred at ALS Adelaide. Assaying was carried out at ALS Brisbane or ALS Perth. The majority of tin and tungsten fusion ICP analyses were carried out at ALS Perth and the majority of multi-element ICP analyses were carried out at ALS Brisbane. High grade tin and tungsten analyses were carried out by fusion XRF at ALS Brisbane and all but one batch of overrange copper, lead, zinc, and arsenic analyses were carried out at ALS Brisbane.

ALS sample preparation comprised oven drying, weighing and coarse crushing of entire samples to 6 millimetres (ALS method CRU21). A 3 kilogram sub-sample of the crushed material is pulverized to 85% passing 75 microns (ALS method PUL23). Samples >3 kilograms were first riffle split.



Analytical schemes used are as follows:

- ALS method ME-MS85: All samples analysed for Sn and W. 0.1g sub-sample. Lithium borate fusion with ICPMS analysis.
- ALS method ME-XRF15b: Over limit (>1%) Sn and W. 0.5g sub-sample. Lithium borate fusion with strong oxidizing agents and XRF analysis.
- ALS method ME-MS61: All samples analysed for Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Ki, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn and Zr. 0.25g sub-sample. Four acid digest with ICPMS analysis.
- ALS method OG62 Over limit Cu, Pb, Zn and As. 0.4g sub-sample. Four acid digest with ICPAES analysis.

## 11.4.1 Laboratory Independence and Certification

ALS Perth is a NATA Accredited Testing Laboratory. Corporate Accreditation No. 825. Corporate site No 23001.

ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No. 825. Corporate Site No 818.

ALS Australian laboratories conform to the requirements for ISO/IEC 17025:2005 and ISO 9001:2015.

## 11.5 QUALITY ASSURANCE/QUALITY CONTROL

### 11.5.1 QC Program

Quality assurance monitoring included weighing of bulk samples, and routine submission of field duplicates, standards and coarse blanks in the same assay batches as original samples. Field duplicates were taken by spear at the rate of 1 per 25 original samples. Coarse blank material was obtained from crushed dolerite located at a commercial yard in Fingal and used for road works. Coarse blanks were inserted at a nominal rate of 1 per 25 original samples. Tin standards were also inserted at a rate of 1 per 25 original samples. Tin standards were also inserted at a rate of 1 per 25 original samples.

•	OREAS147	0.0699% Sn
•	OREAS148	0.1157% Sn
•	OREAS140	0.1755% Sn

- OREAS141 0.6061% Sn
- OREAS142 1.04% Sn
- OREAS198 "Blank" 2.58ppm Sn, 1.12ppm W

The order of insertion of check samples was:

- i. Original
- ii. Duplicate
- iii. Coarse blank
- iv. Standard
- v. Blank standard



### 11.5.1.1 Blanks

### 11.5.1.2 Field Duplicates

RC field duplicate results were analysed by two methods: a relative difference plot (RDP) and calculation of the average coefficient of variation (CVavg), as recommended by (Abzalov, 2008). The RDP is shown in Figure 11-1, and indicates that the duplicate-original pair difference overall decreases at the pair average grade increases.



Figure 11-1. Relative Difference Plot for TinOne RC Sample Duplicates NB Orange line is the "calibration curve" showing the relationship between mean pair grade and relative difference.

Calculation of the CVavg gave a result of 11.3%, which is within the expected range of field duplicates in stockwork vein style deposits (Abzalov, 2008) and indicates that there are no issues of concern with the representivity of RC samples.

### 11.5.1.3 Certified Reference Materials

Analytical results for the seven certified reference materials used by TinOne are shown as combined Control Charts in Figure 11-2 and Figure 11-3. The charts indicate no issues with analytical precision, although it should be noted that it is difficult to draw too many conclusions from the small number of samples analysed for OREAS147, 148 and 700. The analysed means for all CRM are all very close to the certified means, with the exception of OREAS198, which shows a large relative difference. However, the certified mean for this CRM is within 10 times the lower detection limit of the analytical method used, which likely accounts for the apparently lower accuracy. It should be noted that only



ORES140, 141 and 142 are certified for tin as their primary element: the others are derived from lithium pegmatite, nickel laterite and magnetite skarn material.



Figure 11-2. Combined Control Chart for OREAS140, 141 and 142



Figure 11-3. Combined Control Chart for OREAS147, 148, 198 and 700

## **11.6 DISCUSSION ON SAMPLING**

The author considers that quality control measures adopted by TinOne for assaying of the Great Pyramid drilling has established that the assaying is representative and free of any biases or other factors that may materially impact the reliability of the analytical results. The author considers that the sample preparation, security and analytical procedures adopted for the Great Pyramid drilling provides an adequate basis for the current Mineral Resource estimates



## **12 DATA VERIFICATION**

### **12.1 DRILL HOLE DATABASE**

Drill hole data was supplied by TinOne as a set of comma-separated text files that contained the following data:

- Drill hole collar details (Hole ID, location, total depth, date of drilling)
- Drill hole downhole survey data
- Results of assayed intervals
- Logged geology (not available for some historical holes), including for TinOne drilling only, separate tables for alteration and mineralization
- Interpreted oxidation surface downhole depths
- TinOne QAQC assay results.

Files were loaded into an MS Access relational database and several validation checks were carried out, including:

- Collar location coordinates within expected ranges
- Downhole table depths not exceeding collar depths
- Excessive drill hole survey deviation (deviations more than 1° dip or azimuth per 3 m were confirmed)
- Overlapping downhole interval check.

No major errors were reported during the validation checks. The only issues with TinOne data were some overlapping intervals in geology tables where the drilling had changed from RC precollars to diamond tails.

Collar locations were compared with LiDAR topographic survey elevation data acquired by the Tasmanian government. TinOne hole elevations matched very closely, having all been surveyed by DGPS. Historic hole locations have been derived mainly from digitizing and georeferencing old maps and it was seen that some did not match the positions of access tracks visible in the LiDAR data. Where appropriate, TinOne staff corrected these collar positions to better match the LiDAR topographic surface.

Included in the drill hole database were results of underground adit sampling by BHP in 1983. Several issues with the locations of this data were apparent:

- 1. Adit locations were incorrect when compared with LiDAR topography that clearly shows the entrances.
- 2. Adit traces were incorrect when compared with the BHP/Shell sampling maps from 1983.
- 3. Adit traces shown on several different maps differ in azimuths by up to 10° in some instances (eg BHP/Shell 1983, BHP 1981, Mines Dept 1965, Aberfoyle 1970s). The directions in all cases are relative to magnetic north shown on all maps.

Given the uncertainty of the adit trace locations and the underground sampling methodology, MA decided not to use the assays as informing samples for the resource estimation. However, the broad outline of mineralization as intersected in the adits was used as a guide for modelling the mineralization domains.



## **12.2 CURRENT PERSONAL INSPECTION**

During their personal inspection (8 to 10 August, 2023), the QP verified the presence of visible cassiterite mineralization in quartz chips from RC drilling.

Activities during the site visit included:

- Review of the geological and geographical setting of the Project.
- Review and inspection of the site geology, mineralization and structural controls on mineralization.
- Review of the drilling, logging, sampling, analytical and QA/QC procedures.
- Five random TinOne holes were audited, assays in the current database were verified against the original sample certificates from ALS Laboratories. The tin, tungsten and bismuth values in the assay table were found to match the laboratory certificates.
- Review of the chain of custody of samples from the field to assay lab.
- Review of the drill logs, drill core, storage facilities.
- Confirmation of some (11 TinOne and 4 historic) drill hole collar locations.
- Review of the artisanal operations (3 inspected) that were dedicated to the exploration and sampling (wall and bulk samples, (Carter, 1985)) of Sn.
- Review of the structural measurements recorded within the drill logs and how these measurements are utilized within the 3D structural model.
- Physically validated the logging of hole 22GPD003, MA noted that the original drill logs agreed well with the re-logging and tin assay values seem to agree well with the amount of visible silica alteration and sheeted veining and tungsten assays agreed well with visible wolframite in quartz veins.
- Logging for BHP holes are not in the drill hole database but were checked in Progress Reports (BHP, 1982) lodged with the Department of State Growth -Mineral Resource Tasmania (MRT), key holes were summarized into the drill hole database.

### **12.2.1** Drill Hole Collar Confirmation

Eleven TinOne holes from the 2022 drill program were picked up with a hand-held GPS. Collar locations were found to be within expected levels of accuracy of the GPS, noting that there were fewer visible satellites on the south side of Pyramid Hill compared to the north side. Collar locations for three BHP diamond holes and the one TNT hole were also confirmed with a hand-held GPS unit.

#### 12.2.2 Drilling and Core Handling

No drilling was taking place during the site visit. All TinOne core is stored in a hired shed at Fingal close to TinOne's main field office.

A half day was spent in the core shed where hole 22GPRC003 was logged independently by the QP, observing the extent of silica alteration and mineralized veining. Selected intervals from holes 22GPRC012 and 22GPD001A were reviewed.

#### 12.2.3 Independent Samples

No independent sampling was undertaken. The project has a long history of exploration by reputable companies (BHP, Aberfoyle and Billiton) and additional drilling of 4 holes by the Minerals Resource



Tasmania (State Government Department). BHP and Minerals Resource Tasmania (MRT), core holes are available for viewing at the MRT core yard.

### **12.3 VERIFICATION OPINION**

After the review, MA concluded that the Great Pyramid drilling database was sufficiently reliable for inclusion in the estimation of a mineral resource. MA note's spatial reliability issues with the adit samples and repeatability issues with the initial BHP percussion drill program. Samples from the historic BHP diamond and the 1981 percussion drilling programs along with the historic Aberfoyle drilling form the 1970s proving sufficiently reliable with twin hole drilling to be used for the creation of a mineral resource estimate. Samples from the adits and the early 1965 BHP open hole percussion (PCD) drilling (23 holes for 842.95 m) are not used in creation of this mineral resource estimate.

# 13 MINERAL PROCESSING AND METALLURGICAL TESTING

Preliminary metallurgical testwork, undertaken by Billiton Australia in 1984 (Ruxton, P.A., 1984), on a composite 2 tonne bulk sample from the Pyramid Hill adits defined a tin recovery of 65 - 70% with the use of a conventional tin treatment plant.

The sample was initially crushed to 13mm before grinding in a rod mill with a 400 $\mu$ m screen.

After grinding, a Hydrosizer (of similar design to a Concenco three-cell model constricted plate classifier) separated the feed into coarse, medium and fine products, with the fine fraction grab sampled and sent for analysis of grind size and tin content. The coarse and medium fractions were sent to a Reichert type LG7 single-start spiral separator which produced concentrate, middling and tailing fractions. All products were weighed, sampled and assayed. The concentrate was also size analysed, and the size fractions assayed for tin.

The spiral concentrates were passed over a laboratory-scale wet shaking table to produce a cassiterite concentrate, and middling/tailing products. Once again, all products were weighed, sampled and assayed.

The magnetic separation test work on both the coarse and medium table products showed that a significant proportion of the tin recovered from the gravity flowsheet was in a liberated form. The data also showed that the concentrates contained high proportions of other heavy minerals which were mainly magnetic in nature.



## **14 MINERAL RESOURCE ESTIMATES**

### 14.1 APPROACH

The Mineral Resource Statement presented herein represents the first disclosure of mineral resources for the Great Pyramid Project by TinOne prepared in accordance with the Canadian Securities Administrators' National Instrument 43-101 (NI43-101). There are several historic mineral resource estimates available for the Great Pyramid Project, but none are compliant with NI43-101 standards.

The mineral resource model prepared by MA is informed by 40 diamond core holes, 16 reverse circulation (RC) holes and 159 percussion holes. Thirteen core holes (from surface or pre-collared) and 16 RC holes were drilled by TinOne in 2022, including three holes that were abandoned within 42 m and redrilled and one hole attempted three times before being abandoned (couldn't penetrate an old adit). Additional drilling was carried out by previous property owners in 1965, 1970 and 1980-1983. The current resource estimation work was completed by Mr. I Taylor, FAusIMM (CP) (#110090) an appropriate "independent qualified person" as defined in National Instrument 43-101. The effective date of the resource statement is August 31<sup>st</sup>, 2023.

### 14.2 SUPPLIED DATA

TinOne has compiled a drill hole database that includes all historical drilling results as well as new TinOne drilling. Most of the historic data is restricted to assays and a simple lithology field code, although graphic logs are available in historical reports for diamond core holes. Other data utilized included:

- structural measurements from surface and underground mapping
- results of underground adit sampling programs from 1905, 1914 and 1982
- recent lithological-structural mapping commissioned by TinOne
- analysis of multi-element geochemistry on TinOne holes
- topographic surface derived from LiDAR aerial surveying by the Tasmanian state government.

### 14.3 DATA PREPARATION AND STATISTICAL ANALYSIS

All drillhole data was imported into a Microsoft Access database for validation and ease of use in statistical and modelling software packages.

#### **14.4 DIMENSIONS**

Drilling at Great Pyramid covers a total area of approximately 600 m in a northwest direction and a maximum of 300 m in a northeast direction. The deepest hole reached a depth of approximately 400 m below surface, although most open-hole percussion drilling reached depths of less than 50 m.

### 14.4.1 Drill Hole Spacing

Historic shallow vertical open-hole percussion drill holes were drilled on a regular grid at a spacing of approximately 30 m by 15 m covering the entire outcropping area of mineralization. Other drill holes are at an irregular spacing, with some oriented to intersect stratigraphy rather than mineralization.

MA is of the opinion that the current drill pattern for the Great Pyramid Project is sufficient for the estimation of mineral resource for a sheeted vein style deposit.



## 14.5 GEOLOGICAL INTERPRETATION

Mineralization at Great Pyramid is hosted within northeast to east-northeast trending and steeply northwest dipping zones of sheeted, narrow quartz veins that cross-cut northwest-trending stratigraphy and folding. It is recognized that mineralized veining and fracturing is generally of higher density within quartzite/sandstone units and an initial attempt was made to define the contacts of the sandstone units as 3D surfaces to assist with estimation domaining. However, it became apparent that the unit contacts could not be confidently projected to the subsurface due mainly to the interfingering of units, folding, and the inability to distinguish between sedimentary quartzite and strongly silica-altered siltstone/mudstone. It was also apparent that the sedimentary units did not provide hard boundaries to mineralization, with tin grades extending across contacts.

Modelling grade shells from the drilling data in Leapfrog<sup>™</sup> was found to produce a better outcome in terms of shapes that appear to reflect the distribution of mineralization more realistically. Manual editing/addition of grade shell inputs (in the form of contour lines/points) was used to ensure that shells did not extend too far into regions of no data and allowed loose constraints to be included that honoured the stratigraphic controls. Sampling from adits was included in manually added points as the samples themselves were considered too unreliable. Mapped mineralized fracture orientations were used to define a structural trend that was applied to the grade shell model, producing a slight elongation/flattening within the plane of the veins. Two nested grade shells were modelled, using cut-offs based on statistical analysis of drill hole grades (see Section 14.3), at 700ppm Sn and 1800ppm Sn. The grade domains effectively define broad structural zones within which sheeted veining is more intensely developed (Figure 14-1).

The other main features modelled are the northwest-trending Great Pyramid Fault and the northeasttrending dolerite dyke. Both features are poorly outcropping, with the dyke the best defined by drilling and mapping. The surface trace of the fault is interpreted differently depending on the mapping, although the fault itself is more likely to be a broad zone rather than a single planar contact. The Pyramid fault is not defined as a hard domain boundary, as grade domains appear to be continuous across it, indicating that most movement occurred prior to mineralization.





Figure 14-1. Plan View of Geological-Mineralization Model [MA, Aug 2023]

### 14.6 DOMAINS & STATIONARITY

A log probability plot of all raw tin assays > 100ppm Sn showed natural breaks in the distribution at 700ppm and 1800ppm, with additional subtle breaks at 3700 and 5800ppm Sn (Figure 14-2).





Figure 14-2. Log Probability Plot of Tin Assays Over 100ppm



Figure 14-3. Tin Assays (red > 3700ppm, magenta > 5800ppm Sn) [MA, Aug 2023]

Higher tin grades (>1800ppm) are clustered within sandstone units and to a lesser extent highly silicified siltstone. The grade appears to have gradational boundaries within the two lower grade sample sets, grades are associated with silica content/alteration.

Two nested grade domains were defined using the Leapfrog model: low-grade (LG) >700ppm Sn and high-grade (HG) >1800ppm Sn. A separate domain, termed LS6, was defined as including smaller, isolated zones of >700ppm Sn that typically were modelled off one or two drill intercepts. Although



grades were estimated into these volumes, LS6 domain material was not classified or reported as a mineral resource.



Figure 14-4. Tin Estimation Domains, Great Pyramid Project [MA, Aug 2023]

# 14.7 COMPOSITING

Assays were flagged according to mineralized domain. Each domain was assigned a unique alphanumeric code to allow the application of hard boundary domaining if required during grade estimation. The samples were then composited as a means of achieving uniform sample support. Exploration databases that contain multiple sample types, multiple sources of data and varying primary sample lengths, create challenges in generating data with equalized and uniform support.

Raw sample lengths from mineralized domains were statistically assessed prior to selecting an appropriate composite length (Table 14-1). Diamond core was sampled to geological contacts and dominant sample lengths are 1 m for TinOne sampling and 5 ft for the 1965 Paringa-Aberfoyle drilling. BHP favoured 6 ft samples and MRT holes were sampled at variable lengths, with 3 m the most common.

Sample Lengths	Domains Sn700		Domain Sn1800		
	count	average grade (Sn ppm)	count	average grade (Sn ppm)	
1 m	905	1429	256	4479	
5 ft	1029	1446	549	4031	
2 m	152	1435	32	3938	
3 m	13	1615	1	2700	



Samples were composited down-hole to various nominated lengths using the Surpac "Best Fit" function. This method reduces the number of rejected short samples by varying the composite length slightly to best fit the sampled intervals.



The effect on the mean and variance (represented as the coefficient of variation, CV) for both domains

Figure 14-5 and Figure 14-6. The optimal compromise is a reduced CV and a small reduction in the mean. The expected reduction in the mean is commonly due to short high grade samples being length-weighted to the selected composite length using neighbouring samples.



Figure 14-5. Sn700 Domain Composite Length Analysis





Figure 14-6. Sn1800 Domain Composite Length Analysis

Splitting samples during compositing is bad practice as it introduces an extra component of oversmoothing to the composites, artificially lowering the variance. The ideal composite length for Great Pyramid would be the first multiple of 1 m and 1.5 m (5') samples, which is 3 m (coincides with the 10' samples). However, compositing to 3 m greatly reduces the number of samples available for estimation. Compared to raw samples, compositing to 1 m increases the number of samples by 40% (3,112 to 4,352 samples), indicating that a significant proportion (61%) are being split.

After consideration of relevant factors relating to geological setting, likely mining selectivity and bench/flitch height and varying sample lengths, a regular 1.5 m appears most appropriate, though half the 1 m samples will be split (~ 27% of all samples will be split), compared to splitting all the 1.5 m samples when compositing to 1 m.

The 1.5 m composites were used for subsequent statistical, geostatistical, and grade estimation investigations.

# 14.7.1 Summary Statistics

The drill hole assay table has 9,463 entries. Of these, 1,968 are within the lower grade zone, 856 are within the higher-grade zone and 300 samples are included in the LS6 domain. The remainder are in country rock or the dolerite dyke (73).

Statistical analyses were carried out on the composited assay data, summary statistics for Great Pyramid tin composites are summarized in Table 14-2. Table 14-3 provides an insight into the number and mean grades of other assays within the domains.

Domain (Sn %)	LG7	HG18	LS6	
Number of samples	1799	785	249	
Minimum value	0.009	0.01	0.017	
Maximum value	1.540	3.82	1.015	
Mean	0.139	0.409	0.173	
Median	0.110	0.310	0.132	
Geometric Mean	0.112	0.322	0.134	
Variance	0.011	0.105	0.020	

Table	14-2.	Summary	Statistics	-	Tin
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Domain (Sn %)	LG7	HG18	LS6
Standard Deviation	0.106	0.324	0.142
Coefficient of variation	0.762	0.791	0.822
25.0 Percentile	0.079	0.210	0.084
50.0 Percentile (median)	0.110	0.310	0.132
75.0 Percentile	0.166	0.490	0.201
97.5 Percentile	0.430	1.298	0.560
Trimean	0.116	0.330	0.137

#### Table 14-3. Composite Count and Associated Assays (Sn, W, Bi and As)

Domian	Number of samples	Tin (ppm)	Number of composites	Tungsten (ppm)	Number of composites	Bismuth (ppm)	Number of composites	Arsenic (ppm)
LG7	1799	1413	609	24	438	15	691	786
HG18	785	4128	212	31	141	20	201	647
LS6	249	1734	167	101	158	36	207	977

## 14.7.2 Grade Capping

Grade capping analysis was initially conducted on the domain-coded sample data to identify any extreme outliers and data entry errors. No extreme outlier samples were identified, which is reflected by the low raw data CV values and samples were composited to 1.5 m. The assays for all domains were examined using scatter plots (grade v northing/easting/RL), histograms and cumulative frequency plots. Capping threshold values were selected to minimize the influence of isolated outliers during estimation. Capping values and change in statistics are shown in Table 14-4, with only a small number of composited assay values being adjusted by grade capping.

	Uncapp	oed Com	posite Data		Capped Compo	Capped Composite Data				
Domain	Count	Mean	Maximum	cv	Count capped	Mean	Cap value	cv	% Cap	% <b>∆</b> *
LG7	1799	1413	15396	0.86	9	1394	7771	0.76	0.5%	-1.4%
HG18	785	4128	38200	0.84	4	4093	21384	0.79	0.5%	-0.9%
LS6	249	1734	10147	0.84	2	1728	8528	0.82	0.8%	-0.4%

Table 14-4. Composite Capping Levels for Great Pyramid

% Cap is the percentage of samples that the grade cap is applied to.

\*%  $\Delta$  represents metal lost (average – average capped)/average. Where average is the uncapped composite grade and average capped is the average of the composites after capping.

#### 14.8 VARIOGRAPHY

Continuity analysis (variography) was undertaken based on 1.5 m composites of the tin data (uncapped grades) for representative mineralization domains created within the modelled wireframe constraints. All variography was completed using Supervisor software. The assessed domains included:

- Structural domain 7: a low grade (700ppm Sn) domain orientated along strike of the sheeted vein sets.
- Structural domain 18: higher grade Sn domain dominantly within Sandstone and sandy siltstone units. Also controlled by the orientation of the sheeted veins.

Experimental variograms (semi-variograms) were generated using normal score transforms of the 1.5 m composite data, minimizing adverse effects of the highest (uncapped outlier) grades on the underlying structure of the variogram. The following process was employed to determine the major, semi-major and minor axes of continuity and derive the directional variograms models:



- Generate horizontal variogram fan and determine direction of greatest continuity (along strike)
- Generate across strike vertical variogram fan and determine direction of greatest continuity, generally the down dip direction
- Generate variogram fan in the plane of mineralization (defined by the previous two steps) and determine the major axis of grade continuity (a plunge component).

The major axis commonly defines the plunge or strike of the lodes, the semi-major axis is, by default, at 90° to the major axis in the dip plane, and the minor axis is orthogonal to both the major and semi-major axes.

The final step is to model and refine downhole variograms to establish the close-range variance and nugget effect. Experimental variograms from the adit sampling (omnidirectional) were used to help inform decisions regarding nugget effect.

The defined nugget effect was transferred to the directional variograms (major, semi-major and minor axis orientations) and two nested spherical structures and ranges were applied to model the experimental variograms.

The resultant variogram models for each domain were back transformed to the variance of the input data and standardized to an overall sill value of 1.

Generally well-structured variograms were obtained from the continuity analysis, yielding moderate relative nugget effects of 58% for HG and LG tin domains. Maximum ranges for the low-grade and high-grade domains were similar at 88 m and 80 m respectively.



	Rotation	ı		Variog	Variogram				Anisotropy	/	Anisotropy	
Domain	Bearing	Plunge	Dip	Со	C1	A1	C2	C2	Major/S- Major	Major/ Minor	Major/S- Major	Major/ Minor
Adits	0	0	0	0.67	0.11	3	0.22	50	1.00	1.00		
LG7	115.6	12.7	38.3	0.58	0.14	36	0.28	88	2.00	3.00	1.38	2.10

#### Table 14-5. Variogram Parameters



LS6	90.9	48.6	40.9	0.21	0.2	44	0.59	115	1.10	1.10	1.28	1.28
HG18	268.3	15.2	13.2	0.58	0.16	14	0.25	80	1.17	2.00	1.33	2.67

## 14.8.1 Kriging Neighbourhood Analysis

Kriging Neighbourhood Analysis (KNA) is a technique employed to assess the optimal neighbourhood parameters to be considered for grade estimation using Ordinary Kriging (OK). Several (14) blocks were chosen in the vicinity of well or poorly informed composite data within each domain (Figure 14-9). Salient output kriging parameters (estimation statistics used to measure the quality of the grade estimate) were analysed by iteratively varying one neighbourhood parameters whilst the rest remain constant. Based on the analysis of the output kriging parameters the optimal estimation and neighbourhood parameters were determined.



Figure 14-9. Selected Blocks for Kriging Neighbourhood Analysis [MA, Aug 2023]

The two key kriging statistics are kriging variance and block variance, with these two statistics the basis for kriging efficiency and the conditional bias slope (CBS - the most popular kriging statistic to base confidence on). Each location was estimated within various blocks sizes and the resultant CBS plotted. Search distance (90 m, proximal to the variogram ranges) and informing samples (10 to 25) were fixed and square blocks of fixed depth (5 m) were tested. Block sizes ranged from 5 m x 5 m to 40 m x 40 m in 2.5 m increments. The low-grade domain was less susceptible to block size (Figure 14-10), mostly due to the better distribution of samples throughout the domain. The higher-grade domain is less broad and the distribution of samples less well defined (Figure 14-11).





The optimal block size defined by KNA was chosen as 15 m x 15 m x 5 m. This agrees well with the rule-of-thumb size of ½ the average drill spacing, which at Great Pyramid is approximately 30 m x 15 m in the best drilled areas.

With a selected block size, the number of informing samples were optimized, again with the search distance fixed at 90 m. Grade estimates were iteratively compiled using a minimum of 2 samples and varying the maximum number of samples from 2 to 30 in steps of 2. Plots of kriging efficiency, average distance to samples, Conditional Bais Slope (CBS) and estimated grade from the analysis of the output kriged parameters were plotted for each block. Summary plots are shown in Figure 14-12 and Figure 14-13 along with the minimum and maximum conditional bias slopes. Note the broader spread of grades in Domain 18 indicating that poorly informed blocks are relying on distal samples for a grade estimate. MA selected 12 and 24 as minimum and maximum number of informing composites as optimal. This range of samples provides a robust CBS (flatter curve) and minimizes grade fluctuations while preserving local variations before the mean of the block over smoothed (static).



The optimization of the search ellipse adopted anisotropic ratios determined in the variogram analysis. Search ellipse long axis was varied from 15 m to 180 m (1/2 the drill spacing to more than twice the variogram range) and increased by 15 m increments. No blocks were estimated with a 15 m search distance. Blocks size and number of informing samples were kept at the optimized size and range. Generally, the maximum number of samples was found within 45 m of the selected block centroids. Deeper blocks within the resource require a larger search ellipse to include the necessary 24 informing samples and the selected search distance selected (60 m) is near the range of the variograms (80 m).



When block kriging, one must choose how to discretize the block and discretizing points should always be regular; the spacing between the points may be larger in one direction if the spatial continuity is anisotropic (Isaaks & Srivastava 1989). Closer spaced points in one direction indicate less continuity in that direction, although each point should account for the same area. (ie. decisions regarding continuity impact the shape of the block and number of discretizing points).



Figure 14-14. Discretization Points Optimization

Discretization points were optimized (Figure 14-14) and chosen as a factor of the composite length to block size. The 15 m x 15 m x 5 m blocks were given a discretization grid of 5 x 5 x 2 mimicking twice the sample size. Discretization choices affect the kriging statistics and therefore indirectly the confidence in the estimate, but not the estimated grade.

## **14.9 GRADE ESTIMATION**

A 3D block model was created in the National grid (GDA94, MGA Zone 55) using Surpac software (v7.6.2). The reported resource was estimated using ordinary kriging using variograms modelled with a nugget and two spherical structures.

# 14.9.1 Block Model

A block model (Pyramid\_2.mdl) was constructed to cover the entire extent of the mineralized domains for Great Pyramid (Table 14-6). The block model includes estimated tin, tungsten, bismuth and arsenic grades as well as estimated grades by techniques other than ordinary kriging (Table 14-7).

	0.00		
Туре	Y	Х	Z
Minimum Coordinates	5413707	599353	-200
Maximum Coordinates	5414187	600013	240
User Block Size	15	15	5
Min. Block Size	3.75	1.875	2.5
Rotation	65	0	0

Table 14-6	Block Model	Origin	and	Extente
Table 14-0.	DIOCK IVIOUEI	Uligili	anu	EXTERNS

Ordinary Kriging (OK) was used for the estimation of block grades. Each metal was estimated using two-passes with varying minimum and maximum sample requirements. All estimated elements relied on the tin variograms. Only tin is reported as having reasonable prospects of economic extraction.



Capped composite data used for the estimation was restricted to samples located in the respective domains, i.e., hard boundaries were used.

Attribute Name	Туре	Decimals	Background	Description
as_id	Float	3	0	arsenic inverse distance estimate capped
as_nn	Float	3	0	arsenic nearest neighbour estimate capped
bi_id	Float	3	0	bismuth inverse distance estimate capped
bi_nn	Float	3	0	bismuth nearest neighbour estimate capped
density	Float	2	2.68	Density
deposit	Character	-	TAS	Deposit Region - Tasmania
lode	Character	-	WS	Mineralization Domain
lode_id	Integer	-	-99	lode number
rescat	Integer	-	6	Resource classification (1 measured 2 indicated 3 inferred 4 unclassified 5 mined out 6 rock
rock	Integer	-	1	Air=0 Rock=1 Basalt = 2 Tertiary Sediments = 3
sn_id	Float	3	0	tin inverse distance estimate capped
sn_nn	Float	3	0	tin nearest neighbour estimate capped
sn_ok	Float	3	0	tin ordinary krige estimate capped
w_id	Float	3	0	tungsten inverse distance estimate capped
w_nn	Float	3	0	tungsten nearest neighbour estimate capped
wth	Character	-	FR	FR = FRESH ROCK, PO = PARTIALLY OXIDIZED ROCK, OX = OXIDIZED ROCK
z_ads	Float	2	0	average distance to samples
z_brg	Float	2	0	bearing of mineralization
z_cbs	Float	2	0	Conditional bias slope
z_dh	Integer	-	0	number of informing drillholes
z_dhid	Character	-	0	hole_id
z_dip	Float	2	0	dip of mineralization
z_dns	Float	2	0	distance to nearest sample
z_ke	Float	2	0	krige efficiency
z_kv	Float	2	0	krige variance
z_ns	Integer	-	0	number of informing samples
z_ps	Integer	-	0	1 First Pass; 2 Second Pass Estimate

#### Table 14-7. Block Model Attributes

## 14.9.2 Search parameters

Dynamic search ellipses were used to find informing composites. Ellipse orientations were derived from structural form surfaces generated in Leapfrog from surface mapping of veins (the same form surfaces used to control domain models). Eleven (11) surfaces representing the variation in vein trends, with the dip and strike recorded at wireframe vertices, were imported into the Surpac block model.

MA selected search ellipse radii of 60 m x 45 m x 28.5 m and 12 to 24 informing composites as optimal (section 14.8.1, pg. 67). For the second pass search the search ellipse was doubled and the range of acceptable samples reduced to between 6 and 18.



### 14.10 BULK DENSITY

One hundred and thirty-five (135) specific gravity measurements were obtained from core samples from the Great Pyramid project using the water immersion method. The water immersion method is based on the principle that when an object is immersed in water it experiences an upward force (buoyancy) equal to the weight of water displaced, which is used to determine its volume. The weight of the object measured in air is divided by the calculated volume to give the specific gravity using the following formula:

SG = weight in air/(weight in air - weight in water)

For well cemented and consolidated rocks with negligible pore space, specific gravity is a reasonable proxy for dry bulk density.

Samples were taken from a range of sedimentary rock types and from various depths/weathering states. No density measurements have been taken from the dolerite dyke but since it does not contain mineralization there is no impact on resource tonnages.

There is no relationship between tin grade and density. Cassiterite has a density around 6.9 t/m<sup>3</sup>, but the majority of mineralized samples contain less than 2% of the mineral by weight. There is a positive correlation between depth below surface and density, which reflects the degree of weathering (Figure 14-15).



Figure 14-15. Scatter Plot of Specific Gravity Versus Sample Depth

Statistics for densities of different rock types grouped by interpreted weathering profile shows the same general increase in average density from completely oxidized to fresh rock (Table 14-8). Average densities range from 2.58 t/m<sup>3</sup> for completely oxidized material to 2.77 t/m<sup>3</sup> for fresh. The maximum value for all data of 2.97 t/m<sup>3</sup> appears to be an outlier that may be due to measurement error. The limited data collected to date suggests that there are no significant differences in density controlled by differences in the sedimentary lithology. It is expected that samples of fresh dolerite would have a higher density than the sedimentary rocks (n=4, 2.82 t/m<sup>3</sup>).

Weathering	Lithology	Count	Density	Min SG	Max SG	St Dev
Moderately Weathered	Ssl	1	2.58	2.58	2.58	
	Sst	6	2.58	2.53	2.63	0.04
	SstF	2	2.72	2.71	2.74	0.02
	SstM	8	2.56	2.398	2.63	0.07
Weakly Weathered	Ssl	1	2.54	2.535	2.535	
	Sst	2	2.7	2.69	2.71	0.01
	SstF	13	2.62	2.53	2.81	0.07
	SstM	2	2.56	2.542	2.569	0.02
Fresh Rock	Ssl	3	2.66	2.486	2.77	0.15
	SstF	4	2.68	2.6	2.84	0.11
	HFspt	1	2.84	2.839	2.839	
	Md	4	2.83	2.82	2.84	0.01
	Sms	7	2.77	2.732	2.83	0.04
	Ssh	3	2.78	2.75	2.83	0.04
	Ssl	38	2.71	2.522	2.862	0.07
	Sst	15	2.74	2.6	2.83	0.07
	SstF	22	2.77	2.601	2.97	0.09
	Zfx	3	2.68	2.552	2.77	0.12

#### Table 14-8. Summary Of Average Densities for Different Oxidation Levels and Lithology Codes

### **14.11 VALIDATION**

The block model was validated visually by the inspection of successive cross sections to confirm that the block model correctly reflects the distribution of high-grade and low-grade samples. Figure 14-16 shows a typical oblique section comparing estimated tin grades with drill hole assays. As can be seen, the estimated grades seem to agree reasonably well with the drill hole data.





Figure 14-16. Oblique Section Showing Tin Block Grades and Drill Hole Grades [MA, Aug 2023]

A comparison of global mean values within the grade domains shows a reasonably close relationship between composites and block model values (Table 14-9).

Domain	Tonnes	Density	Composite Count	Tin Composites Mean	Tin Estimate Mean	% Difference
LS6	4,216,000	2.74	249	0.17	0.19	-11%
LG7	8,552,000	2.62	1,799	0.14	0.14	3%
HG18	1,087,000	2.60	785	0.41	0.42	-1%

Table 14-9. Global Tin Validation by Domain

Alternative estimation methods Nearest Neighbour and ID<sup>2</sup> were utilized to ensure the kriged estimate was not reporting a global bias (Figure 14-17). The alternative estimates provided expected correlations. Nearest Neighbour shows less tonnes and higher grade (less contained metal) as it does not employ averaging techniques to assign the block grade, with distal blocks being informed by a single closest sample rather than several weighted samples. The ID<sup>2</sup> estimate is closer to kriging as it does use averaging weighted by distance but cannot assign anisotropy, nor can it de-cluster the input data or account for nugget effect. Using the kriging algorithm provides a reliable estimate due to the ability of kriging to de-cluster data and weight the samples based on a variogram (which incorporates the nugget effect and anisotropy).





Figure 14-17. Alternative Estimation Results at Nominated Cut-offs (Capped Grades)

Swath plots were generated on 25 m wide vertical swaths orientated NE-SW to assess local bias along strike by comparing the OK estimate with informing composite means for tin. Results show no significant bias between OK estimates and informing samples, and the smoothing effects of kriging are apparent, in Figure 14-19 high grade domain northern end.



## 14.11.1 Previous Resource Comparisons

Seven historic resources (three undertaken by BHP in 1981 is considered as minor updates of the one estimate in Table 14-10) have been previously estimated for the project. All historical estimates presented in this chapter are non-verified estimates prepared prior to the issuer's interest in the property and are not compliant with NI43-101 reporting standards. The estimates are presented for comparison purposes only and the work cannot be reliability verified. Historical estimates do not use CIM standards for resource categories. The QP of this report has not undertaken sufficient work to classify historical estimates as a current resources and the Company is not treating the historical estimate as a current resource.

The earliest three estimates used available drill and adit data and were estimated by polygonal methods. The 1986 estimate, which was generated at 0.1% tin cut-off, was not reported or classified in accordance with either the JORC code or NI43-101 and is described as preliminary only (Hall, D.B. and Carter, D.N., 1986). The interpreted polygons extend to around the base of percussion drilling and the model represents a comparable volume to the current estimates.



The 1996 model (Morrison & Knight, 1996), which was not reported or classified in accordance with the JORC code or NI43-101 includes the deeper broadly spaced diamond drilling, and estimates similar tonnes as the current model with a higher tin grade for more metal.

The 2011 model (Abbott, 2011) was reported and classified in accordance with the JORC code (2004), and subsequently updated to conform to JORC 2012 by Niuminco (Niuminco Group Limited , 2014).

			Indica	ited		Infer	red		
Year	Company	Cut-off Grade	Mt	Sn %	Sn kt	Mt	Sn %	Sn kt	Method
1969-74	Paringa Aberfoyle	Na	4.0	0.3					Polygonal Cross sections
1981	BHP	Na	4.1	0.22	9.02	4.2	0.16	6.7	Triangulations, based on levels (to 90 level)
1986	Billiton	0.1				3.1	0.22	6.8	Preliminary only and estimated using "envelope principal"
1996	MCC	0.1				8.2	0.19	15.6	ID2 though variograms were generated
2011	TNTM	0.1				5.2	0.18	9.2	MIK reported as 0.2% Sn and 10.4kt
2023*	TinOne	0.1				8.3	0.17	14.0	Current Mineral Resource Estimate

Table 14-10. I	Historical	Estimates,	Comparative	Purposes	Only*
		,			

\*A qualified person has not done sufficient work to classify the historical estimate as current mineral resources \*The issuer is not treating the historical estimate as current mineral resources

#### **14.12 CUT-OFF GRADE ANALYSIS**

Reporting cut-off grade was analysed using inputs based on the experience of the QP and benchmarking against similar projects. The reader is cautioned that the results from this cut-off grade analysis are used solely for the purpose of testing the "reasonable prospects for eventual economic extraction" by an open pit and do not represent an attempt to undertake a preliminary economic analysis or estimate mineral reserves. There are no mineral reserves on the Great Pyramid Project. The results are used as a guide to assist in the preparation of a mineral resource statement and to select an appropriate resource reporting cut-off grade.

Several conceptual pit shells were manually created in Surpac with an inter-ramp angle of 55° for the purpose of assessing potential strip ratios, which is considered as a significant indicator of extraction economics. No other economic inputs were included in the designs and the resulting pits are not optimized. The selected "best" pit had a mineralization:waste strip ratio of 1:1.12 (Figure 14-20). Using this strip ratio and assumed operating costs outlined in Table 14-11 along with assumptions relating to tin price, recovery, royalties, refining costs and mining dilution as summarized in Table 14-12, a cut-off grade of 0.1% tin is considered reasonable in the opinion of the QP.





Figure 14-20. Plan View of Great Pyramid Pit Shell [MA, Aug 2023]

#### Table 14-11. Assumed Operating Costs

Cost Centre	\$/t Processed	Description
Mining Cost	\$7.43	Includes cost of mining waste
Geology Costs	\$0.12	Grade Control
Administration	\$2.97	Site and HO admin
Processing Cost	\$7.72	Processing plant
Haulage Cost	\$-	Ore haulage (rehandle)
Rehabilitation	\$0.30	close out costs
Ore Cost/t Ore	\$18.53	

### Table 14-12. Resource Cut-off Assumptions

Resource Cut-off Assumptions			
Area	Units	Value	Comment
Tin Price	USD\$/t	\$24,978	
Recovery	%	80%	
Effective Revenue	USD\$/t	\$19,982.70	
Less Royalty	%	5.0%	
Less per t Costs	USD\$/t	\$49.96	(TCRC 0.25% revenue)
Realized Revenue	USD\$/t	\$18,933.61	
Cost to Mine/t ore	USD\$/t	\$7.54	Assumed strip ratio 1:1.12
Costs to Process/t ore	USD\$/t	\$10.99	
Cutoff (in place)	%	0.098	(979ppm)



Resource Cut-off Assumptions			
Dilution	%	5%	
Resource Cutoff Grade	%	0.103	(1028ppm)

#### 14.12.1 Assumptions for reasonable economic extraction

The predominant tin bearing mineral is fine grained cassiterite. Mineralization is near surface and can be extracted using conventional open pit mining methods. Concentration of cassiterite to a commercially acceptable concentrate of 55% Sn could be achieved by a combination of size classification, gravity separation and/or sulphide flotation.

#### 14.12.2 Grade Sensitivity Analysis

The mineral resources of the Great Pyramid Project are sensitive to the selection of the reporting cutoff grade. To illustrate this sensitivity, the global model quantities and grade estimates within the resource shell are presented in Table 14-13 and Figure 14-21 at different cut-off grades. The reader is cautioned that the numbers presented in this table should not be misconstrued with a Mineral Resource Statement. The numbers are only presented to show the sensitivity of the block model estimates to the selection of cut-off grade.

Cut-off	Mineralization (Mt)	Sn (%)	tin (kt)
> 0.08	8.58	0.17	14.57
> 0.10	8.39	0.17	14.40
> 0.12	6.50	0.19	12.28
> 0.14	3.70	0.23	8.66
> 0.16	2.00	0.31	6.15
> 0.18	1.48	0.36	5.29
> 0.20	1.23	0.39	4.82

Table 14-13. Block Model Quantities and Grade Estimates\*: Great Pyramid Project at Various Cut-off Grades

\*The reader is cautioned that the figures in this table should not be misconstrued with a Mineral Resource Statement. The figures are only presented to show the sensitivity of the block model estimates to the selection of cut-off grade. **Resource statement in bold.** 





Figure 14-21. Grade Tonnage Curve for the Great Pyramid Project

## 14.13 MOISTURE

No moisture measurements have been collected at the Great Pyramid Project. All tonnages reported are dry metric tonnes.

## **14.14 MINING & METALLURGICAL FACTORS**

No mining or metallurgical factors have been applied to the reported mineral resource.

# 14.15 RESOURCE CLASSIFICATION

The Great Pyramid Tin Mineral Resource has been classified and reported in accordance with the CIM (2014) definitions as incorporated in NI43-101. Resource classification is based on confidence in the geological domaining, drill spacing, and geostatistical measures. The initial classification process was based on an interpolation distance and minimum samples within the search ellipse.

A range of criteria have been considered in determining the classification including:

- geological continuity
- geology sections plan and structural data
- interpolation criteria and estimate reliability based on sample density, search and interpolation parameters, not limited to kriging efficiency, kriging variance, and conditional bias
- drill hole spacing
- constraint by a pit shell.

The resource estimate for the Great Pyramid deposit has been classified as Inferred Mineral Resources (Figure 14-22) based on the confidence levels of the key criteria as presented in Table 14-14.

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or continuity (CIM 2014). Due to the number of criteria classified with a low confidence the mineral resource has been classified as Inferred.



An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.



Figure 14-22. Great Pyramid Deposit Mineral Resource [MA, Aug 2023]

Table 14-14. Resource	Classification (	Criteria
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Item	Discussion	Confidence
Drilling Techniques	Drilling Techniques A combination of Open Hole percussion, RC and Diamond - Industry Standard approach. Open Hole percussion drilling (PCD) can introduce contamination as the drill chips are returned to surface outside the rods. 42% of drill metres are obtained by open hole percussion drilling.	
Logging	Standard nomenclature has been adopted but not used in entire database.	High
Drill Sample Recovery	TinOne Recoveries are recorded in database. Earlier BHP diamond recoveries are recorded in the Annual Exploration Activities Reports. Review of current and BHP drilling suggests diamond core recoveries are of acceptable standard. TinOne RC recovery is recorded as a visual estimate of the size of the drill returns.	High
Sub-sampling Techniques and Sample Preparation	Diamond core and RC sampling conducted by normal industry techniques. PCD sampling method is not recorded. 34% of all samples and 44% of mineralized samples are from the Paringa-Aberfoyle open hole percussion drilling.	Historical - Low Recent - High
Quality of Assay Data	Appropriate quality control procedures are available for the TinOne drilling. They were reviewed on site and considered to be common industry practice. Recent TinOne drilling confirms the tenor of the previous drilling	Moderate/High
Verification of Sampling and Assaying	Sampling and assaying procedures have been assessed and are considered in line with common industry practice.	Moderate
Location of Sampling Points	Survey of all collars conducted with accurate survey equipment. Investigation of downhole survey indicates appropriate behaviours.	Moderate/High
Data Density and Distribution	Majority of regions defined on a notional 15 m NE by 30 m NW drill spacing.	Moderate



Item	Discussion	Confidence
Audits or Reviews	Data documentation was assessed during site review. Core was viewed during the stie review.	
Database IntegrityAssay certificates of the TinOne drilling have been verified and no issues were identified. Historic assay data was verified in lodged annual reports to the Mineral Resource Department.		Moderate/High
Geological Interpretation Mineralization controls are reasonably well understood. The mineralization constraints are robust but relatively broad and therefore of moderate confidence.		Moderate
Estimation and Modelling Techniques	Ordinary Kriging is considered to be appropriate given the geological setting and grade distribution.	High
Cut-off Grades	OK is independent of cut-off grade although the mineralization constraints were based on a 0.07 % Sn lower cut-off grade. A 0.1 % Sn lower cut-off grade is considered appropriate for reporting.	Moderate/High
Mining Factors or Assumptions	No mining factors have been applied to the mineral resource. The deposit outcrops on the Great Pyramid Hill, the highest grades are near surface. A pit shell with a low strip ratio was used to constrain the resource. The modelled strip ratio was used in the reasonable prospect of economic extraction test	Low
Metallurgical Factors or Assumptions	No metallurgical factors have been applied to the mineral resource. It is assumed the metallurgical recovery of cassiterite will be reasonably straight forward, a recovery of 80% was achieved in metallurgical test work in the 1980's. No recent metallurgical test work has been commissioned.	Low
Tonnage Factors (In- situ Bulk Densities)	Localized data collected diamond core in waste rock and ore rock in oxide, transitional and fresh material.	High

## **14.16 MINERAL RESOURCE ESTIMATE STATEMENT**

CIM Definition Standards for Mineral Resources and Mineral Reserves (Canadian Institute of Mining, Metallurgy and Petroleum (CIM), 2014) defines a mineral resource as:

"A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling."

The "material of economic interest" refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals.

The "reasonable prospects for economic extraction" requirement generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries. In order to meet this requirement, MA considers that some portions of the Great Pyramid Deposit are amenable for open pit extraction.

In order to determine the quantities of material offering "reasonable prospects for eventual economic extraction" by an open pit, MA manually created a pit shell (inter-ramp angle of 55°) and considered reasonable mining and metallurgical assumptions to evaluate the proportions of the block model (Inferred blocks) that could be "reasonably expected" to be mined from an open pit.

The input considerations were selected based on experience and benchmarking against similar projects (Section 14.12). The reader is cautioned that the results from the Cut-off Analysis are used solely for the purpose of testing the "reasonable prospects for eventual economic extraction" by an open pit and do not represent an attempt to undertake a preliminary economic analysis or estimate mineral reserves. There are no mineral reserves on the great Pyramid Project. The results are used as

a guide to assist in the preparation of a mineral resource statement and to select an appropriate resource reporting cut-off grade.

Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 14-15. Great Pyramid Tin Deposit Inferred Mineral Resource (> 0.10% Sn) \*\*

Cut-off	Tonnes (Mt)	Tin grade (%)	Metal (Sn kt)
> 0.10	8.39	0.17	14.40

\*\* Open pit mineral resources are reported at a Sn cut-off grade of 0.10% inside a resource shell based on a Sn price of USD \$24,978/t and 80% recovery. All numbers have been rounded to reflect the relative accuracy of the estimate. Mineral resources are reported in relation to a conceptual pit shell. Mineral resources are not mineral reserves and do not have demonstrated economic viability. Numbers may not add up because of rounding of values.



## **15 MINERAL RESERVE ESTIMATE**

This section is not applicable to this report.

### **16 MINING METHODS**

This section is not applicable to this report.

### **17 RECOVERY METHODS**

This section is not applicable to this report.

## **18 PROJECT INFRASTRUCTURE**

This section is not applicable to this report.

## **19 MARKET STUDIES AND CONTRACTS**

This section is not applicable to this report.

#### 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

A flora and fauna habitat survey was carried out at RL2/2009 in 2018 by Philip Milner Landscape Consultants Inc on behalf of TNT Mines Limited before a proposed drilling campaign. The purpose of the study was to establish a baseline for environmental monitoring. Three threatened species, two flora and one fauna, were identified within the tenement area.

- (1) Lesser Guinea Flower (Hibbertia calycina):
  - (a) Listed as vulnerable under the Tasmanian Threatened Species Protection Act 1995.
  - (b) Occurs within the Mineral Resource area, but under the Tasmanian legislation a "Permit to Take" can be acquired if it is necessary to remove or destroy any individual plants as part of mine development or exploration activities.
- (2) Cane Holygrass (Hierochloe rarifolia):
  - (a) Listed as rare under the Tasmanian Threatened Species Protection Act 1995.
  - (b) Does not occur within or close to the Mineral Resource area.
- (3) Giant Velvet Worm (Tasmanipatus barretti):
  - (a) Listed as rare under the Tasmanian legislation and as endangered under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999.*
  - (b) In 1987 the species was recorded as occurring in a gully on the flanks of Pyramid Hill, well outside the Mineral Resource area.

The listed species are not considered by the issuer to be a significant liability to the development of the project.

No evidence of environmental or declared weeds were found on the property.

No permitting studies, including social or community impact studies, have commenced to date.

## 21 CAPITAL AND OPERATING COSTS

This section is not applicable to this report.

# 22 ECONOMIC ANALYSIS

This section is not applicable to this report.

## **23 ADJACENT PROPERTIES**

No adjacent properties have an important bearing on the potential of the subject property.

# 24 OTHER RELEVANT DATA AND INFORMATION

This section is not applicable to this report.

## **25 INTERPRETATION AND CONCLUSIONS**

The Great Pyramid Project is an early-stage tin exploration prospect located on the east side of the state of Tasmania, Australia. The history of Great Pyramid dates back to the turn of the 20<sup>th</sup> century when The Great Pyramid Tin Mining Company carried out early exploratory tunnelling and shaft sinking during the period of 1909-1910. Mr H. Aulich produced 5.379 t tin concentrate between 1928 and 1936. Geologists from BHP initially drilled open hole percussion holes in 1965 identifying the tin potential during regional reconnaissance along the Tasmanian Coast.

Drilling by TinOne and previous owners of the property has identified the extents of tin mineralization hosted within multiple zones of sheeted quartz-cassiterite veins that intersect a folded succession of sandstone, siltstone and mudstone.

A total of 214 drill holes totalling 13,961 m were available, of which 23 (843 m) open hole percussion drilled during 1965 were excluded from the estimate due to assay quality issues. The remainder (191 holes, 13,074 m) have delineated an Inferred Mineral Resource of 8.9 million tonnes grading 0.17% Sn. Mineral resources were estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserve Best Practices" guidelines by ordinary kriging using Geovia's Surpac software. Mineral resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent resource estimates.

MA is not aware of any significant risks and uncertainties that could be expected to affect the reliability or confidence in the early-stage exploration information discussed herein.



## **26 RECOMMENDATIONS**

The 2022 field season was successful in expanding the mineral resources and demonstrating the continuity and tenor of the mineralization at Great Pyramid. MA recommends that TinOne continues to explore the Great Pyramid Project. Specifically, MA recommends additional drilling to extend the mineralization deeper as the overlying topography affords low strip ratios, which should allow incremental increases in depth without the burden of additional waste being moved.

Drilling is recommended to target previously identified deep mineralization (SPG001a and 22PRC003) and confirm that it extends up dip between 0 and 100 mRL, potentially merging with known mineralization at surface. Further recommendations include replacing some of the open hole percussion drilling with RC or diamond drilling to increase the confidence on the known mineralization informed by historic (1970's) drilling. MA also recommends that TinOne initiates a preliminary metallurgical testing program to determine the viability of extracting cassiterite and to better define the tin recovery. Additionally, MA recommends that TinOne continue collect bulk density data to enhance the quality of future mineral estimates.

Following the next drilling campaign and contingent on positive results, MA recommends that TinOne prepare a Preliminary Economic Assessment ("PEA") for the Great Pyramid Project.

A program of at least 1,500 m of drilling consisting of 5 holes taken to relatively shallow depths (< 170 m on average) for 1050 m to extend known mineralization, with a further 3 contingency holes (300 m) and 5 RC holes (150 m) to confirm the historic open hole percussion drilling results. The total cost of the combined phases is expected to be about \$949,000 dollars.

Description	Quantity	Unit	Cost Estimate (AUD\$)
Phase 1 Program			
Diamond drilling all in cost (\$450/m)	1050	metres	\$472,500
Diamond drilling dependent on initial drill results	300	metres	\$135,000
Confirmation/infill drilling all in cost (\$250/m)	150	metres	\$37,500
Metallurgical testing (4 drill core composites)	4	each	\$100,000
Bulk density measurements	200	each	\$4,000
TOTAL Phase 1			\$749,000
Phase 2 Program Contingent on Phase 1 results			
Preliminary Economic Assessment			\$200,000
Total Phase 2			\$200,000
Total Recommendations (Phase 1 + 2)			\$949,000

Table 26-1. Estimated Cost for the Exploration Program Proposed for the Great Pyramid Project

MA is unaware of any other significant factors and risks that may affect access, title, or the right or ability to perform the exploration work recommended for the Great Pyramid Project.



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# 28 DATE AND SIGNATURE PAGE

The undersigned prepared this technical report titled: "Independent Technical Report on the Mineral Resource Estimate, Great Pyramid Tin Property, Australia", dated the 09<sup>th</sup> day of December 2023, with an effective date of the 31<sup>st</sup> of August 2023. The format and content of the Technical Report have been prepared in accordance with Form 43-101F1 and National Instrument 43-101 – Standards of Disclosure for Mineral Projects of the Canadian Securities Administrators.

Dated this 9<sup>th</sup> day of December 2023

/s/ "Ian Taylor"

lan Taylor, BSc (Hons). G.Cert. Geostats. FAusIMM (CP) Consulting Geologist

## **CERTIFICATE OF QUALIFIED PERSON**

I, Ian Taylor, B.Sc. (Hons), G.Cert. Geostats, M.AusIMM (CP), do hereby certify:

- I am a Principal Geologist with Mining Associates with a business address at L6 445 Upper Edward Street Spring Hill Queensland 4004.
- This certificate applies to the technical report entitled "Independent Technical Report on the Mineral Resource Estimate, Great Pyramid Tin Property, Australia" with the effective date of August 31<sup>st</sup>, 2023 (the "Technical Report").
- I am a graduate of James Cook University (B.Sc. [Hons], 1993) and Edith Cowan University (Graduate Certificate in Geostatistics, 2013). I am a Fellow and Chartered Professional in good standing of the Australasian Institute of Mining and Metallurgy (#110090). My relevant experience includes more than 25 years in the minerals industry. My work experience includes resource geology, production geology in open pit and underground mines, and exploration roles.
- I am a "Qualified Person" for the purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) for Technical Report that I am responsible for preparing.
- I visited the Property that is the subject of the Technical Report during the period of 8<sup>th</sup> to 10<sup>th</sup> August 2023 to review the geological setting, locate some drill collars, inspect drill core and sample storage, and discuss geological models with site-based geologists.
- I am independent of TinOne Resources Inc as defined by Section 1.5 of NI 43-101.
- My previous experience with the Property that is the subject of this Technical Report includes the Lion One 2015 PEA for which I was a Qualified Person.
- I am responsible for the entire Technical Report.
- I have read the National Instrument (43-101) and the Technical Report that I am responsible for preparing. The technical report has been prepared in compliance with NI 43-101.
- As of the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report that I am responsible for preparing contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed, sealed, and dated this 9<sup>th</sup> day of December 2023.

<u>/s/ "lan Taylor"</u> Ian Taylor, B.Sc. (Hons), G.Cert. Geostats, M.AusIMM (CP) Principal Geologist Mining Associates



## **GLOSSARY OF TECHNICAL TERMS**

"adit"	A horizontal passage leading into a mine for the purposes of access or drainage.
"As"	Chemical symbol for arsenic
AUD	Australian Dollar
"Ві"	Chemical symbol for bismuth
"bulk density"	The dry in-situ tonnage factor used to convert volumes to tonnage. Bulk density testwork is carried out on site and is relatively comprehensive, although as samples of the more friable and broken portions of the mineralised zones are often unable to be measured with any degree of confidence, caution is required when using the data.
"cut-off grade"	The lowest grade value that is included in a resource statement. Must comply with JORC requirement 20 <i>"reasonable prospects for eventual economic extraction"</i> , namely the lowest grade, or quality, of mineralised material that qualifies as economically mineable and available in a given deposit. May be defined based on economic evaluation, or on physical or chemical attributes that define an acceptable product specification.
"DGPS"	Differential Global Positioning System.
"diamond drilling, diamond core"	Rotary drilling technique using diamond set or impregnated bits to cut a solid, continuous core sample of the rock. The core sample is retrieved to the surface, in a core barrel, by a wireline.
"Dollar" "\$"	Dollars are quoted as Australian dollars (AUD).
"downhole survey"	Drillhole deviation as surveyed down hole by using a conventional single-shot camera and readings taken at regular depth intervals, usually every 50 metres.
"drill hole database"	The drilling, surveying, geological and analyses database is produced by qualified personnel and is compiled, validated and maintained in digital and hardcopy formats.
Exploration Target	An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade, relating to mineralization for which there has been insufficient exploration to estimate a Mineral Resource.
"ft"	USCS unit of length (0.3048 m).
"GDA94"	Location data captured and located using the Universal Transverse Mercator format using Geodetic Datum Australia 1994 (GDA94).
"GPS"	Global Positioning System.
"Inferred Resources"	An 'Inferred Mineral Resource' is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified for geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops.



	trenches, pits, workings and drillholes which may be limited or of uncertain quality and reliability.
"Indicated Resources"	An '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 drillholes. 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.
"m"	Scientific unit of length, metre, or meter.
"M" "m"	Million, lower case when referring to dollar values.
"m E"	A grid axis, Metres East.
"m N"	A grid axis, Metres North.
"mm"	Unit of length, millimetre. One thousandth of a metre.
"micron (μ)"	Unit of length, one thousandth of a millimetre or one millionth of a metre.
"Mineral Resource"	A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilised organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics, and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories when reporting under JORC 2012 or Canadian Institute of Mining, Metallurgy and Petroleum (CIM) definitions and guidelines.
"ppm"	A concentration of parts per million.
"QAQC"	Quality Assurance/Quality Control. The procedures for sample collection, analysis and storage. Drill samples are despatched to 'certified' independent analytical laboratories for analyses. Blanks, Duplicates and Certified Reference Material samples should be included with each batch of drill samples as part of the Company's QAQC program.
"RC"	Reverse Circulation drilling. A method of rotary drilling in which the sample is returned to the surface, using compressed air, inside the inner-tube of the drill-rod. A face-sampling hammer is used to penetrate the rock and provide crushed and pulverised sample to the surface without contamination.
"RQD"	Rock Quality Designation, RQD is a rough measure of the degree of jointing or fracture in a rock mass, measured as a percentage of the drill core in lengths of 10 cm or more. Above 75% is good, competent rock.
"Sn"	Chemical symbol for tin
"t"	Unit of Mass, Tonne (= 1 million grams).



"USD"	Dollars are quoted as US dollars.
"W"	Chemical symbol for tungsten