For personal use only

ASX RELEASE

19 December 2023

2023 RENISON ORE RESERVE AND LIFE OF MINE UPDATE

Metals X Limited (**Metals X** or the **Company**) is pleased to provide its update of the Ore Reserve estimate and Life of Mine (**LOM**) Plan for the Renison Tin Operations (**Renison**) in Tasmania. Renison is 50%-owned by Metals X through the Bluestone Mines Tasmania Joint Venture (**BMTJV**).

HIGHLIGHTS (100% basis)

Ore Reserve update

Total Renison Bell Proved and Probable Reserve is now 8.225 Mt at 1.48% Sn for 121,700 tonnes of contained tin (taking into account depletion for mining over the past 12 months, updated tin price and a revised cut-off grade):

- Increase in cut-off grade from 0.65% Sn to 0.75% Sn following LOM economic analysis;
- 7% decrease in total Reserve ore tonnes at Renison underground over the past 12 months;
- 1.3% increase in Reserve tin grade at Renison underground over the past 12 months; and
- 5.7% decrease in Reserve contained tin at Renison underground over the past 12 months.

The 2023 Renison Bell Mineral Resource estimate update for the Renison underground tin mine, on which this Ore Reserve update is based, was announced to ASX on 28 September 2023, and highlighted:

- Total Measured, Indicated and Inferred Resource at Renison Bell of 20 Mt at 1.54% Sn for 308kt of contained tin.
- Measured and Indicated Resource tonnage increased by 0.4Mt and tin tonnes decreased by 0.5% to 270kt of contained tin.
- Inferred Resources decreased by 22% to 38kt of contained tin.

Life of Mine update

Key operational highlights of the updated LOM Plan include:

- Mine life of 10+ years with the bulk of ore mined from the high-grade Area 5 and Leatherwood ore bodies.
- Average annual Sn grade of 1.44% mined and 1.95% processed.
- First ten-year average annual production of 10,191t of recovered Sn.
- Average site LOM All-in Costs of AUD$26,247/t Sn.
- The Renison ore system remains open at depth and along strike with planned and ongoing drilling programs providing excellent potential to continue to add to the LOM Plan inventory.
- Recent exploration activities have identified the Ringrose mineralised system as having significant potential to add additional material to the Life of Mine Plan inventory (see ASX releasee 5 July 2023, Significant Drilling Results at Renison).

CORPORATE DIRECTORY
Unit 202, Level 2
39 Mends Street
South Perth WA 6151
ASX Code: MLX

T +61 8 9220 5700
E reception@metalsx.com.au
ABN 25 110 150 055

www.metalsx.com.au

Executive Director Mr Brett Smith, commented:

"The updated Life of Mine Plan now extends out to 2035, with the first 10 years averaging more than 10,000 tonnes of tin per annum. Given the location in a stable political environment combined with the operations world class safety record and the bonus of a predominantly renewable energy supply this update provides the security for a stable and sustainable operation for all stake holders. Further to this, the Life of Mine Plan does not yet include the additional contribution from the Rentails project, which provides an opportunity for the production of additional tin at a lower production cost."

MINERAL RESOURCE AND ORE RESERVE STATEMENT

TABLE 1. RENISON TIN OPERATIONS ORE RESERVE ESTIMATE AT 31 MARCH 2023

MLX equity share is 50% of the Ore Reserve estimate shown below.

		Tin			Copper		
Project	**Ore Reserve Category**	**Ore Kt[3]**	**Grade % Sn**	**Tin Tonnes[4]**	**Ore Kt[3]**	**Grade % Cu**	**Copper Tonnes[4]**
Renison Bell[1]	Proved	1,754	1.70	29,800	1,754	0.20	3,508
	Probable	6,471	1.42	91,900	6,471	0.20	12,942
	Total	8,225	1.48	121,700	8,225	0.20	16,450
Rentails[2]	Proved	-	-	-	-	-	-
	Probable	22,313	0.44	98,900	22,313	0.23	50,700
	Total	22,313	0.44	98,900	22,313	0.23	50,700
TOTAL	Proved	1,754	1.70	29,800	1,754	0.20	3,508
	Probable	28,784	0.66	190,800	28,784	0.22	63,642
	Total	30,538	0.72	220,600	30,538	0.22	67,150

Notes:

1. *The Renison Bell Ore Reserve is based on the Mineral Resource estimate at 31 March 2023 (refer to ASX Announcement of 28 September 2023) with applied modifying factors, at a cut-off grade of 0.75% Sn.*
2. *The Renison Tailings Retreatment Project (Rentails) Ore Reserve is unchanged from that reported as at 31 March 2017 (refer to ASX Announcement of 28 August 2017), at a cut-off grade of 0.0% Sn.*
3. *Tonnes are reported as thousand tonnes (Kt) and rounded to the nearest 1,000 tonnes. Rounding may result in some slight apparent discrepancies in totals and grades.*
4. *Tin and copper tonnes were rounded to the nearest 100 tonnes. Rounding may result in some slight apparent discrepancies in totals and grades.*

For personal use only

TABLE 2. RENISON TIN OPERATIONS MINERAL RESOURCE ESTIMATE AT 31 MARCH 2023

MLX equity share is 50% of the Mineral Resource estimate shown below.

					Contained Metal	
Deposit	**Mineral Resource Category[1,2]**	**Tonnes (Mt)**	**Tin (% Sn)**	**Copper (% Cu)**	**Tin (Kt)[6]**	**Copper (Kt)[6]**
Renison Bell[3]	Measured	2.45	1.95	0.21	47.8	5.25
	Indicated	14.8	1.51	0.19	223	28.3
	Inferred	2.83	1.33	0.18	37.6	5.19
	Total	20.0	1.54	0.19	308	38.8
Rentails[4,5]	Measured	23.9	0.44	0.22	104	52.7
	Indicated	-	-	-	-	-
	Inferred	-	-	-	-	-
	Total	23.9	0.44	0.22	104	52.7
TOTAL	Measured	26.3	0.58	0.22	152	57.9
	Indicated	14.8	1.51	0.19	223	28.3
	Inferred	2.83	1.33	0.18	37.6	5.19
	Total	43.9	0.94	0.21	412	91.4

Notes:

1. *Mineral Resources are reported inclusive of Mineral Resources modified to produce the Ore Reserve.*
2. *Figures are rounded according to JORC Code 2012 guidelines and may show apparent addition errors. Contained metal does not imply recoverable metal.*
3. *Cut-off grade of 0.65% Sn.*
4. *Cut-off Grade of 0.0% Sn.*
5. *The Rentails Mineral Resource is at 31 May 2018.*
6. *Tonnes are reported as thousand tonnes (Kt) and rounded to the nearest 1,000 tonnes. Rounding may result in some slight apparent discrepancies in totals and grades.*

KEY ASSUMPTIONS AND JORC 2012 REQUIREMENTS

Mineral Resources are reported inclusive of Ore Reserves. Mining production data up to 31 March 2023 and all exploration information has been included. Mineral Resources have been depleted for mining to 31 March 2023.

The tin price assumption used to estimate Mineral Resources and Ore Reserves was US$23,500/t Sn at an assumed exchange rate of USD/AUD 0.70 giving a price of AUD $33,571/t Sn.

The Mineral Resources and Ore Reserves have been classified in accordance with the guidelines set out in the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, published by the Joint Ore Reserves Committee (**JORC**), of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia, December 2012 (the **JORC Code** or **JORC 2012**).

The Mineral Resource estimate for Renison is in Table 2 and was reported to ASX on 28 September 2023. The 2023 Ore Reserve estimate for Renison is reported in Table 1.

Material Information for the individual deposits, including a summary of material information pursuant to ASX Listing Rule 5.9 and the Assessment and Reporting Criteria in accordance with JORC 2012 requirements, is included in the body of this report and in Appendix A to this announcement.

For personal use only

MINERAL RESOURCE AND ORE RESERVE GOVERNANCE STATEMENT

In accordance with ASX Listing Rule 5.21.5, governance of the Company's Mineral Resources and Ore Reserves development and management activities are managed through the management team of Renison in Tasmania which is 50%-owned by Metals X through the BMTJV.

Senior Staff of the BMTJV operation oversee reviews and technical evaluations of the estimates and evaluates these with reference to actual physical, cost and performance measures. The evaluation process also draws upon internal skill sets in operational and project management, ore processing and commercial/financial areas of the business.

The BMTJV Management Committee of which Metals X has three members is responsible for monitoring the planning, prioritisation and progress of exploratory and resource definition drilling programs across the Company and the estimation and reporting of Mineral Resources. These definition activities are conducted within a framework of quality assurance and quality control protocols covering aspects including drill hole siting, sample collection, sample preparation and analysis as well as sample and data security. The BMTJV Management Committee is responsible for the reporting of Ore Reserves.

A four-level compliance process guides the control and assurance activities by the BMTJV:

- Provision of internal policies, standards, procedures and guidelines;
- Mineral Resource and Ore Reserve reporting based on well-founded geological and mining assumptions and compliance with external standards such as the JORC Code;
- Internal review of process conformance and compliance; and
- Internal assessment of compliance and data veracity.

The BMTJV Management Committee aims to promote the maximum conversion of identified mineralisation into Mineral Resources and Ore Reserves compliant with JORC 2012.

The Company reports its Mineral Resources and Ore Reserves, as a minimum, on an annual basis, in accordance with ASX Listing Rule 5.21 and clause 14 of Appendix 5A.

Competent Persons named by the Company are members of the Australasian Institute of Mining and Metallurgy (**AusIMM**) and/or the Australian Institute of Geoscientists (AIG) and qualify as Competent Persons as defined in the JORC Code.

ORE RESERVE ESTIMATE

Table 1 shows the updated Ore Reserve estimate for the Renison Tin Operations at 31 March 2023.

SUMMARY OF MATERIAL INFORMATION

The updated Renison Bell Ore Reserve estimate reported in Table 1 is based on the updated Mineral Resource estimate (refer to ASX Announcement of 28 September 2023) with modifying factors applied. The modifying factors and associated criteria used in determining the Ore Reserve are summarised below, in accordance with ASX Listing Rule 5.9.1, and detailed in Appendix A:

- Geological models used in the estimation are summarised in Appendix A: Table 1, Section 3: Modelling Techniques;
- Cut-off grade was determined based on actual unit costs currently being experienced at the Renison Tin Operations;
- Tin price assumption of US$23,500/t at an assumed exchange rate of USD/AUD 0.70 for a price of AUD $33,571/t Sn;
- The mine predominantly applies an open stoping, backfilled with Cemented Rock Fill (**CRF**), Loose Rock Fill (**LRF**) or Paste Fill. Paste Fill is the preferred backfill method in the Area 5 stopes;

For personal use only

- Underground stoping uses a mining recovery factor of between 90% and 97.5% depending on the individual stoping block. Additionally, mining dilution of between 5% and 20% has been applied to individual stopes blocks;
- Metallurgical recoveries applied to produce tin concentrate from ore are based on historical and current recoveries in the operating Renison Tin Concentrator based on a regression analysis of the grade recovery curve; and
- The operation is fully permitted allowing production to continue for the LOM.

ANNUAL COMPARISON OF ORE RESERVES

Table 3 compares the 2022 Ore Reserve estimate, as at 31 March 2022, with the updated Ore Reserve estimate as at 31 March 2023 for the Renison Bell and Rentails deposit. The Ore Reserve estimate for Rentails has not been updated since 31 March 2017 (reported on 28 August 2017).

MLX equity share is 50% of the Ore Reserve estimates shown below. Ore Reserves are a subset of the Mineral Resource estimate.

TABLE 3. RENISON ORE RESERVE ESTIMATE – DEPLETION & RESERVE ADJUSTMENTS FROM PRIOR YEAR

	Tin			Copper		
Project	**Ore Kt**	**Grade % Sn**	**Metal Kt Sn**	**Ore Kt**	**Grade % Cu**	**Metal Kt Cu**
31 March 2022						
Renison Bell	8,848	1.46	129	8,848	0.16	14
Rentails	22,310	0.44	99	22,310	0.23	51
Total	31,158	0.73	228	31,158	0.21	65
Mining Depletion						
Renison Bell	(761)	1.44	(11)	(761)	0.20	(1.5)
Rentails	-	-	-	-	-	-
Reserve Adjustments						
Renison Bell	137	2.58	4	137	2.88	4
Rentails	-	-	-	-	-	-
31 March 2023						
Renison Bell	8,224	1.48	122	8,224	0.20	16
Rentails	22,313	0.44	99	22,313	0.23	51
Total	30,537	0.72	221	30,537	0.22	67

Note: Rounding may result in apparent discrepancies in totals and grades.

The difference between the 2023 Renison Ore Reserve estimate and 2022 Renison Ore Reserve estimate include the following modifications:

- Update of reserve position based on new drilling, face sampling and sludge data incorporated with stope shape estimations in each mine area;
- All dilution and recovery factors updated as appropriate; and
- Inclusion of new mining areas that have been found to be economically extractable.
- Change in cut-off grades from 0.65% Sn to 0.75% Sn.

For personal use only

TABLE 4. RENISON ORE RESERVE ESTIMATE – ANNUAL

MLX equity share is 50% of the Ore Reserve estimates shown below

		Tin			Copper		
Ore Reserve Reporting Date	Ore Reserve Category[1]	Ore Kt[2]	Grade % Sn	Tin Tonnes[3]	Ore Kt[2]	Grade % Cu	Copper Tonnes[3]
31 March 2023[1]	Proved	1,754	1.70	29,800	1,754	0.20	3,508
	Probable	6,471	1.42	91,900	6,471	0.20	12,942
	Total	8,225	1.48	121,700	8,225	0.20	16,450

Notes:

1. *Ore Reserves as calculated at 31 March 2023 by Metals X, adjusted for depletion to 31 March 2023, based on the Mineral Resource estimate of 31 March 2023 (refer to ASX Announcement, 2023 Renison Mineral Resource Update, dated 28 September 2023).*
2. *Tonnes are reported as thousand tonnes (Kt) and rounded to the nearest 1,000 tonnes. Rounding may result in some slight apparent discrepancies in totals and grades.*
3. *Tin and copper tonnes were rounded to the nearest 100 tonnes. Rounding may result in some slight apparent discrepancies in totals and grades.*

RENISON LIFE OF MINE PLAN UPDATE

Following the completion of the March 2023 Renison Mineral Resource (refer to ASX announcement dated 28 September 2023) the financial model supporting the Life of Mine Plan has been modified and considers recent commodity price and exchange rate assumptions), the current Renison cost environment and a re-optimisation of the mining and processing schedule.

Life of Mine scheduling optimises ore from the high grade Area 5 and Leatherwood ore sources with production ramping up to ~955,000t per annum from CY2025 (Figure 1). Mining methods have remained consistent with previously reported methods, although the completion of the Renison paste plant and the addition of paste fill allows for increased flexibility and optimisation of the LOM Plan.

The current Ore Reserve comprises the bulk of the 10+yr mine life[1] from CY2024. Most of the material mined in the first nine years of the LOM Plan is sourced from Proven and Probable Ore Reserves. Inferred Resources are included and comprise 21% of the overall ore in the plan. Underground Diamond Drilling platforms and associated drilling requirements are included in the plan with the aim of defining new resources and upgrading and extending portions of the current Inferred Resource into Ore Reserve as mining advances. Approximately $97M of diamond drilling costs are included within the LOM Plan.

The Renison LOM Plan reports total mined production of 9,695kt at 1.44% Sn for 139,130t of contained tin. Average annual production over the first ten years of the LOM Plan is estimated at 10,191t of recovered Sn metal in concentrate (Figure 2) with site All-In Costs estimated over the same period to average AUD$25,919/t Sn.

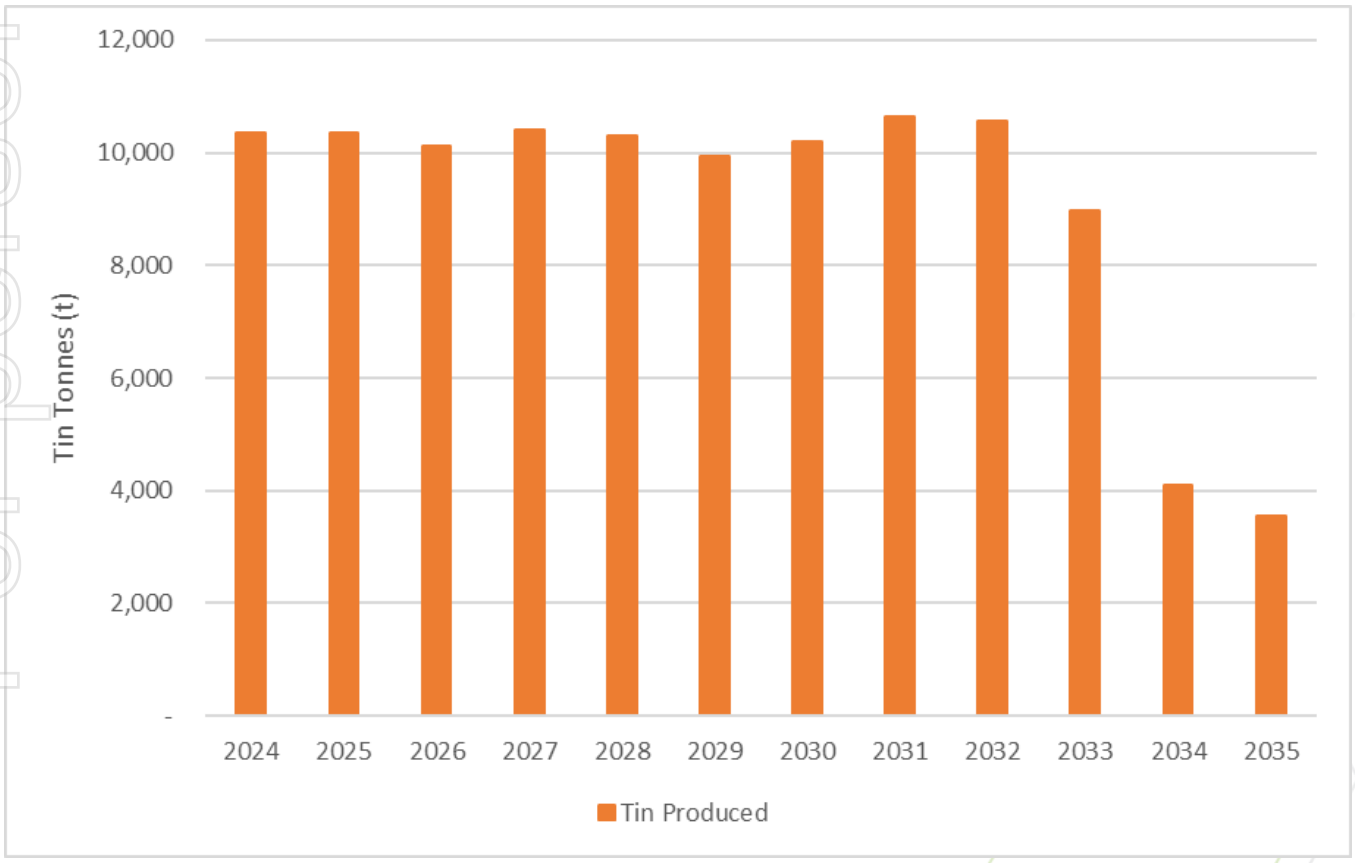
[1] The LOM Plan contains 21% Inferred Mineral Resource which is associated with a lower level of geological confidence when compared to Measured and Indicated Resources. Although ongoing and planned drilling aims to target these Inferred Resources there is no certainty that they will be converted to Ore Reserves or that the production targets associated with them will be realised.

For personal use only

Figure 1: Life of Mine Plan tonnes and grade profile



Figure 2: Life of Mine Plan tin tonnes produced profile



For personal use only

The Key assumptions for commodity price and exchange rate used to determine the LOM Plan's financial assumptions are shown in Table 1.

Table 1: Base Case Commodity Price and Exchange Rate Assumptions

Commodity	USD$/t	AUD:USD	AUD$/t
Sn	$23,500	0.70	$33,571

The site costs of the Life of Mine Plan are shown in Table 2.

Table 2: Life of Mine Plan Site Costs

Site Costs	Base Case (A$M)
Life of Mine Capital Costs	$420
Life of Mine Operating Costs	$2,456
Total Life of Mine Site Costs	**$2,876**
Site Unit Costs (Life of Mine Average)	**AUD$/t Sn**
Capital Costs	3,832
Operating Costs	22,415
Site All-In Costs	**26,247**

COMPETENT PERSONS STATEMENTS

The information in this report that relates to Exploration Results and Mineral Resources has been compiled by Bluestone Mines Tasmania Joint Venture Pty Ltd technical employees under the supervision of Mr Colin Carter B.Sc. (Hons), M.Sc. (Econ. Geol), AusIMM. Mr Carter is a full-time employee of the Bluestone Mines Tasmania Joint Venture Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activities which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Carter consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Ore Reserves has been compiled by Bluestone Mines Tasmania Joint Venture technical employees under the supervision of Mr Philip Bremner, B Engineering (Mining Engineering), AusIMM. Mr. Bremner is a principal mining consultant at Oreteck Mining Solutions. Mr Bremner has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activities which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Bremner consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

This announcement has been authorised by the Board of Directors of Metals X Limited.

ENQUIRIES

Mr Brett Smith
Executive Director
E: brett.smith@metalsx.com.au

For personal use only

INFORMATION MATERIAL TO UNDERSTANDING THE MINERAL RESOURCES AND ORE RESERVES

JORC CODE, 2012 EDITION

JORC TABLE 1: THE INFORMATION IN THIS TABLE REFERS TO THE FOLLOWING PROJECTS AT THE RENISON TIN OPERATIONS: RENISON AND RENTAILS

SECTION 1: SAMPLING TECHNIQUES AND DATA

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.*	**Diamond Drilling** • The bulk of the data used in resource calculations at Renison has been gathered from diamond core. Three sizes have been used historically NQ2 (45.1mm nominal core diameter), LTK60 (45.2mm nominal core diameter) and LTK48 (36.1mm nominal core diameter), with NQ2 currently in use. This core is geologically logged and subsequently halved for sampling. Grade control holes may be whole-cored to streamline the core handling process if required. • NQ and HQ core sizes have been recorded as being used at Mount Bischoff. This core is geologically logged and subsequently halved for sampling. • There is no diamond drilling for the Rentails Project. **Face Sampling** • Each development face / round is horizontally chip sampled at Renison. The sampling intervals are domained by geological constraints (e.g. rock type, veining and alteration / sulphidation etc.). Samples are taken in a range from 0.3m up to 1.2m in waste. All exposures within the orebody are sampled. A similar process would have been followed for historical Mount Bischoff face sampling. • There is no face sampling for the Rentails Project. **Sludge Drilling** • Sludge drilling at Renison is performed with an underground production drill rig. It is an open hole drilling method using water as the flushing medium, with a 64-89mm (nominal) hole diameter. Sample intervals are ostensibly the length of the drill steel. Holes are drilled at sufficient angles to allow flushing of the hole with water following each interval to prevent contamination. • There is no sludge drilling for the Mount Bischoff Project. • There is no sludge drilling for the Rentails Project. **RC Drilling** • RC drilling has been utilised at Mount Bischoff. • Drill cuttings are extracted from the RC return via cyclone. The underflow from each interval is
Drilling techniques ***Drill sample recovery***	• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* • *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure*	

For personal use only

Criteria	JORC Code Explanation	Commentary
	representative nature of the samples. • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	transferred via bucket to a four tiered riffle splitter, delivering approximately three kilograms of the recovered material into calico bags for analysis. The residual material is retained on the ground near the hole. Composite samples are obtained from the residue material for initial analysis, with the split samples remaining with the individual residual piles until required for re-split analysis or eventual disposal. • There is no RC drilling for the Renison Project. • There is no RC drilling for the Rentails Project. **Percussion Drilling** • This drilling method was used for the Rentails project and uses a rotary tubular drilling cutter which was driven percussively into the tailings. The head of the cutting tube consisted of a 50mm diameter hard tipped cutting head inside which were fitted 4 spring steel fingers which allowed the core sample to enter and then prevented it from falling out as the drill tube was withdrawn from the drill hole. • There is no percussion drilling for the Renison Project. • There is no percussion drilling for the Mount Bischoff Project. • All geology input is logged and validated by the relevant area geologists, incorporated into this is assessment of sample recovery. No defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential loss or gain of fine or coarse material been noted.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	• Diamond core is logged geologically and geotechnically. • RC chips are logged geologically. • Development faces are mapped geologically. • Logging is qualitative in nature. • All holes are logged completely, all faces are mapped completely.

personal use only

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Generally, drill core is sampled whole-core to streamline the handling process and ensure a larger more representative sample is obtained. For selected drill holes where representative core is required to be kept, core is cut and half sampled. If a field duplicate is required, the core is quarter cored and sampled. • Samples are dried at 90°C, then crushed to <3mm. Samples are then riffle split to obtain a sub-sample of approximately 100g which is then pulverized to 90% passing 75um. 2g of the pulp sample is then weighed with 12g of reagents including a binding agent, the weighed sample is then pulverised again for one minute. The sample is then compressed into a pressed powder tablet for introduction to the XRF. This preparation has been proven to be appropriate for the style of mineralisation being considered. • QA/QC is ensured during the sub-sampling stages process via the use of the systems of an independent NATA / ISO accredited laboratory contractor. • The sample size is considered appropriate for the grain size of the material being sampled. • For half cut core the un-sampled half of diamond core is retained for check sampling if required. • For RC chips regular field duplicates are collected and analysed for significant variance to primary results.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Assaying is undertaken via the pressed powder XRF technique. Sn, As and Cu have a detection limit 0.01%, Fe and S detection limits are 0.1%. These assay methodologies are appropriate for the resource in question. • All assay data has built in quality control checks. Each XRF batch of twenty consists of one blank, one internal standard, one duplicate and a replicate, anomalies are re-assayed to ensure quality control. • Bluestone Mines matrix matched standard reference materials are inserted into each sample batch at a rate of 1 in every 25th sample. • Two samples of Bluestone Mines blank material are inserted in every drill hole after significant mineralisation. • Specific gravity / density values for individual areas are routinely sampled during all diamond drilling where material is competent enough to do so. • The assay laboratory conducts umpire checks reported on a 10-month basis for their own external checks. • XRF calibration and servicing is conducted on a regular basis.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Anomalous intervals as well as random intervals are routinely check assayed as part of the internal QA/QC process. • Virtual twinned holes have been drilled in several instances across all sites with no significant issues highlighted. Drillhole data is also routinely confirmed by development assay data in the operating environment. • Primary data is loaded into the drillhole database system and then archived for reference. • All data used in the calculation of resources and reserves are compiled in databases

For personal use only

Criteria	JORC Code Explanation	Commentary
		(underground and open pit) which are overseen and validated by senior geologists. • The lab results are received electronically in .csv file format. No primary assay data is modified in any way. If any error is noted, including transcription errors, the lab is informed and immediate corrections are requested prior to importing data into database. • An electronic copy of the internal lab monthly report is also filed away in Renison QAQC folder. • No primary assays data is modified in any way.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All data is spatially oriented by survey controls via direct pickups by the survey department. Drillholes are all surveyed downhole, currently with a GyroSmart tool in the underground environment at Renison, and a multishot camera for the typically short surface diamond holes. • All drilling and resource estimation is undertaken in local mine grid at the various sites. • Topographic control is generated from remote sensing methods in general, with ground based surveys undertaken where additional detail is required. This methodology is adequate for the resource in question.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Drilling in the underground environment at Renison is nominally carried-out on 40m x 40m spacing in the south of the mine and 25m, x 25m spacing in the north of the mine prior to mining occurring. A lengthy history of mining has shown that this data spacing is appropriate for the Mineral Resource estimation process and to allow for classification of the resource as it stands. • Drilling at Mount Bischoff is variably spaced. A lengthy history of mining has shown that this data spacing is appropriate for the Mineral resource estimation process and to allow for classification of the resource as it stands. • Drilling at Rentails is usually carried out on a 100m centres. This is appropriate for the Mineral resource estimation process and to allow for classification of the resource as it stands. • Compositing is carried out based upon the modal sample length of each individual domain.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drilling intersections are nominally designed to be normal to the orebody as far as underground infrastructure constraints / topography allows. • Development sampling is nominally undertaken normal to the various orebodies. • It is not considered that drilling orientation has introduced an appreciable sampling bias.
Sample security	• *The measures taken to ensure sample security.*	• At Renison, Mount Bischoff and Rentails samples are delivered directly to the on-site laboratory by the geotechnical crew where they are taken into custody by the independent laboratory contractor.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Resources have in the past been subjected to external expert reviews, which have ratified them with no issues. The current resource including sampling techniques and data are periodically reviewed by independent consultants.

personal use only

SECTION 2: REPORTING OF EXPLORATION RESULTS

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• All Tasmania resources are hosted within 12M1995 and 12M2006. Both tenements are standard Tasmanian Mining Leases. • No native title interests are recorded against the Tasmanian tenements. • Tasmanian tenements are held by the Bluestone Mines Tasmania Joint Venture of which Metals X has 50% ownership. • No royalties above legislated state royalties apply for the Tasmanian tenements. • Bluestone Mines Tasmania Joint Venture operates in accordance with all environmental conditions set down as conditions for grant of the Mining Leases. • There are no known issues regarding security of tenure.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Renison and Mount Bischoff areas have an exploration and production history in excess of 100 years. • Bluestone Mines Tasmania Joint Venture work has generally confirmed the veracity of historic exploration data.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Renison is one of the world's largest operating underground tin mines and Australia's largest primary tin producer. Renison is the largest of three major Skarn, carbonate replacement, pyrrhotite-cassiterite deposits within western Tasmania. The Renison Mine area is situated in the Dundas Trough, a province underlain by a thick sequence of Neoproterozoic-Cambrian siliciclastic and volcaniclastic rocks. At Renison there are three shallow-dipping dolomite horizons which host replacement mineralisation. • Mount Bischoff is the second of three major Skarn, carbonate replacement, pyrrhotite-cassiterite deposits within western Tasmania. The Mount Bischoff Mine area is situated within the Dundas Trough, a province underlain by a thick sequence of Neoproterozoic-Cambrian siliciclastic and volcaniclastic rocks. At Mount Bischoff folded and faulted shallow-dipping dolomite horizons host replacement mineralisation with fluid interpreted to be sourced from the forceful emplacement of a granite ridge and associated porphyry intrusions associated with the Devonian Meredith Granite, which resulted in the complex brittle / ductile deformation of the host rocks. Lithologies outside the current mining area are almost exclusively metamorphosed siltstones. Major porphyry dykes and faults such as the Giblin and Queen provided the major focus for ascending hydrothermal fluids from a buried ridge of the Meredith Granite. Mineralisation has resulted in tin-rich sulphide replacement in the dolomite lodes, greisen and sulphide lodes in the porphyry and fault / vein lodes in the major faults. All lodes contain tin as cassiterite within sulphide mineralisation with some coarse cassiterite as veins throughout the lodes. • The Rentails Mineral Resource is contained within three Tailing Storage Facilities (TSF's) that have been built up from the processing of tin ore at the Renison Bell mine over the period 1968 to 2013.

personal use only

Criteria	JORC Code Explanation	Commentary

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• No exploration results are reported as part of this release, results relating to the deposits have been previously released.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No exploration results are reported as part of this release, results relating to the deposits have been previously released.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• No exploration results are reported as part of this release, results relating to the deposits have been previously released.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• No exploration results are reported as part of this release, results relating to the deposits have been previously released.

personal use only

Criteria	JORC Code Explanation	Commentary
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• No exploration results are reported as part of this release, results relating to the deposits have been previously released.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No relevant information to be presented.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Exploration assessment and normal mine extensional drilling continues to take place at Renison. • Exploration assessment continues to progress at Mount Bischoff. • Project assessment continues to progress at Rentails.

personal use only

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Drillhole data is captured and stored in acQuire GIM Solution software on the Sequel Server platform which is currently considered "industry standard". • As new data is collected it passes through a validation approval system designed to pick-up any significant errors before the information is loaded into the master database. The information is uploaded by a series of Sequel routines and is performed as required. The database contains diamond drilling (including geotechnical and specific gravity data), face chip and sludge drilling data and some associated metadata. By its nature this database is large in size, and therefore exports from the main database are undertaken (with or without the application of spatial and various other filters) to create a database of workable size, preserve a snapshot of the database at the time of orebody modelling and interpretation and preserve the integrity of the master database. • A random check of 20 original assay files against database records is performed before the estimation as part of validation, for any transcription errors or for any incorrect assignment to drillholes. • A resvalid code of zero is assigned to drillhole data deemed reliable and trustworthy. A resvalid code of 1 is assigned as invalid and flagged for further investigation and not used in estimation.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Mr Colin Carter is based at Renison Mine site and is deemed the Competent Person for JORC report requirements. • Site generated resources and the parent geological data is routinely reviewed by experienced senior resource geologists.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Mining has occurred since 1800's providing significant confidence in the currently geological interpretation across all projects. • No alternative interpretations are currently considered viable. • Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure was both sufficiently constrained, and representative of the expected sub-surface conditions. In all aspects of resource estimation the factual and interpreted geology was used to guide the development of the interpretation. • Independent evaluations, underground structural and geological mapping has been verified by an external consultant geologist. • The architecture of the Renison horst / graben system is the dominant control on geological and grade continuity. • Similarly at Mount Bischoff the extent of intrusive felsic dykes in proximity to carbonate horizons control the continuity of grade within the system. • The depositional history of Rentails is well documented.

personal use only

Criteria	JORC Code Explanation	Commentary
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• Renison has currently been mined over a strike length of >1,950m, a lateral extent of >1,250m and a depth of over 1,200m. • Rentails is deposited in three adjacent TSFs which have and aggregate length of approximately 1.8km and a width at the widest point of circa 1km. Maximum depth is in excess of 20m.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• All modelling and estimation work undertaken by BMTJV is carried out in three dimensions via Leapfrog™ and Surpac Vision™. • After validating the drillhole data to be used in the estimation, interpretation of the orebody is undertaken in sectional and / or plan view to create the outline strings which form the basis of the three-dimensional orebody wireframe. Wireframing is then carried out using a combination of automated stitching algorithms and manual triangulation to create an accurate three-dimensional representation of the sub-surface mineralised body. • Drillhole intersections within the mineralised body are defined, these intersections are then used to flag the appropriate sections of the drillhole database tables for compositing purposes. Drillholes are subsequently composited to allow for grade estimation. In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation. • Once the sample data has been composited, a statistical analysis is undertaken Snowden Supervisor to assist with determining estimation search parameters, top-cuts etc. Variographic analysis of individual domains is undertaken to assist with determining appropriate search parameters, which are then incorporated with observed geological and geometrical features to determine the most appropriate search parameters. • An empty block model is then created for the area of interest. This model contains attributes set at background values for the various elements of interest as well as density, and various estimation parameters that are subsequently used to assist in resource categorisation. The block sizes used in the model will vary depending on orebody geometry, minimum mining units, estimation parameters and levels of informing data available. • Grade estimation is then undertaken, with ordinary kriging estimation method is considered as standard, although in some circumstances where sample populations are small, or domains are unable to be accurately defined, inverse distance weighting estimation techniques will be used. Both by-product and deleterious elements are estimated at the time of primary grade estimation. It is assumed that by-products correlate well with tin. There are no assumptions made about the recovery of by-products. • SG is calculated using elemental Sn, S, As, Fe and MgO grades determined by regression analysis and with a stoichiometric function using elemental Sn, Cu, As, Fe and MgO grades. • The resource is then depleted for mining voids and subsequently classified in line with JORC guidelines utilising a combination of various estimation derived parameters and geological / mining knowledge. • This approach has proven to be applicable to BMTJV's tin assets and by previous mining reconciliation.

personal use only

Criteria	JORC Code Explanation	Commentary
		• Estimation results are routinely validated against primary input data, previous estimates and mining output. • Good reconciliation between mine claimed figures and milled figures is routinely achieved.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnage estimates are dry tonnes.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The resource reporting cut-off grade is 0.65% Sn at Renison. • There is no lower reporting cut-off grade for Rentails.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The Renison mine predominantly applies up-hole benching and open stoping with in some cases post fill and cemented rock fill to fill voids. The mining method has been successfully applied over the past decade with small tweaks and geotechnical considerations progressively applied. • A minimum mining width of underground development is 4.5m and for underground stoping a minimum width of 2.0 m. Resource models are diluted to these limits before dilution is applied. • Mining recoveries vary depending upon the stopes physical shape, geological setting and size between 75% and 98%.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• The Renison mine produces a tin concentrate of grade varying between 50- 60 % Sn with internal process designed to reduce penalty metals such as iron, sulphur, tungsten and copper. • The metallurgical process is complex and applies several stages of gravity-type concentration as well as sulphide and oxide flotation, regrinding and acid leach methods. The method is proved and has successfully operated for over 50 years. • The metallurgical recovery is estimated based on regression analysis of grade recovery curves from the actual processing of ores in the plant. • Metallurgical recoveries on the various ore types and grades were considered as part of the cut-off grade analysis. •
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Bluestone Mines Tasmania Joint Venture operates in accordance with all environmental conditions set down as conditions for grant of the respective mining leases.

personal use only

Criteria	JORC Code Explanation	Commentary
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density of the mineralisation at Renison is variable. Bulk density sampling is undertaken via assessments of drill core (BMTJV practice is to undertake bulk density determinations on a representative selection of drill core sent for assay), and are reviewed constantly (BMTJV practice is to collect check SG samples as a regular part of the mining cycle). Where no drill core or other direct measurements are available, SG factors have been assumed based on similarities to other zones of mineralisation. • Due to a comprehensive density dataset available to Renison, it has allowed the regression analysis calculation using elemental Sn, S, As, Fe and MgO grades to determine specific density in the mid and lower Renison Models. This regression calculation uses ordinary kriged block grades to calculate density into each block in the block model and is reconciled back against measured lab SG values. • Renison uses a stoichiometric calculation of density based on dominant mineral species in the Upper Renison Model. This stoichiometric function is then applied on ordinary kriged block grades to calculate density into each block in the block model. The current calculation is as follows: 2.61+(0.0159*Cu)+(0.0349*Sn)+(0.0339*Fe)+(0.0339*As)+(0.0089*MgO). • As a check to the calculation archimedes method data continues to be collected for half cut core. • Given the volume of the TSF's are known, and the tonnage of tailings material deposited into the dams was recorded, the insitu bulk density of the Rentails resource has been back-calculated.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Resources are classified in line with JORC guidelines utilising a combination of various estimation derived parameters, the input data and geological / mining knowledge. This approach considers all relevant factors and reflects the Competent Person's view of the deposit. • At Renison classification utilises inverse distance estimations for measured, indicated and inferred classifications. The measured estimation for classification for most Renison models is limited to utilising only development data off set above the drive to enforce the Bluestone Mines requirement that only those areas with ore development may be classified as measured, up to 20m above the development. The lower Renison models, due to their extensive close spaced diamond drilling also makes use of diamond drill hole proximity to determine measured areas. The inverse distance estimations use a combination of search size and sample selection to allow zones of coherent classification related to drilling density. • A final validation step makes a comparison from previous resource classifications, so that both a visual check and block model outputs can be objectively examined, reflecting changes in input data, confidence of geology and metal values. Variations such as average distance of informing samples, kriging variance and slope of regression values for each resource category, domain and pass number can be appropriately assessed, so that the level of subjectivity when undertaking classification can be minimised.

personal use only

Criteria	JORC Code Explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Resource estimates are peer reviewed by the site technical team as well as by a third party on a biennial basis.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• All currently reported resources estimates are considered robust, and representative on both a global and local scale. • A continuing history of mining with good reconciliation of mine claimed to mill recovered provides confidence in the accuracy of the estimate for Renison and Mount Bischoff. • The application of geostatistical analysis and procedures through Snowden's Supervisor v8.2 software is used to quantify and validate the resource estimate. Currently, it is peer reviewed onsite by experienced senior resource geologists prior to releasing the final resource statement and prior to the final report approved by the Competent Person. • A detailed set of production records provides confidence in the accuracy of the estimate for Rentails.

For personal use only

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• Mineral Resources that have been converted to Ore Reserve are classified as either an Indicated or Measured Resources. • Indicated Resources are converted to Probable Ore Reserves by applying appropriate mining factors. • Measured Resource are converted as Proven Ore Reserves by applying appropriate mining factors. • Mineral Resources are inclusive of Ore Reserves
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Phil Bremner, the Competent Person for the Renison Ore Reserve visited the site during the 2023 reporting period in February & August 2023. While on site Phil inspected the Renison underground and surface installations associated with the operation. • Communication with site has been via video conferencing and email as required.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• Mining is in progress at Renison and has occurred for nearly 50 years. • The current mine design, mining method, operating parameters, modifying factors, actual costs and knowledge gained from Renison operation are used in the Ore Reserve estimate. • A LOM study has been completed to optimise the ore resource in Area 5 and Leatherwood and this information has been used to define the down dip extensions to these two areas.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• The operating cut-off grades vary between areas of the mine due to a range of mill recoveries. The resultant cutoff grades are either 0.65% or 0.75% Sn. These have been estimated on 2022/23 actual mining costs and budget mill recoveries, off site costs and market parameters as determined by the Bluestone Tin board. • Cutoff grades are reduced by 0.1% Sn for stopes which don't require development. A cutoff grade of 0.4% Sn is applied to essential development. • Economic analysis is carried out for each planned stope and only stopes with a positive return are included in the Ore Reserve estimate.

personal use only

personal use only

Criteria	JORC Code Explanation	Commentary
		• No consideration is given to copper co-product revenue in the economic assessment as the mining and recovery of the material is ad hoc and occurs as a consequence of mining the tin.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	• The Renison mine predominantly applies an open stoping, backfilled with Cemented Rock Fill (CRF) and Loose Rock Fill (LRF). The mining method has been successfully applied over 10 years • A paste plant is operational with paste being the preferred method of fill in Area 5 and Leatherwood. • Detailed stope designs are used where access has been developed otherwise preliminary stope designs are used. • A seismic monitoring and management system is in place. • Stress and structural models have been developed and are used to identify appropriate mining sequences, stope spans and ground support requirements. • Ore development is routinely mapped and sampled, stope production is routinely sampled, and monthly mine production is reconciled to milled tonnes and grade. • A minimum mining width of underground development is 4.5m and for underground stoping a minimum width of 3.0 m • Stope reconciliations are used to calculate ELOS which is added as dilution to the stopes generated in MSO. Manually designed stopes have a dilution percentage added which is applicable to the specific area. • Mining dilution and recovery factors are applied to development and stope designs as per below:

Ore Zone	ELOS HW (m)	ELOS FW (m)	Dilution %	Recovery %
Lower Federal			15%	90%
Upper Federal	0.59	0.59	20%	90%
Huon North	0.24	0.24	20%	95%
Central Federal Bassett	0.5	0.25	20%	97.5%
Lower Central Federal Bassett	0.5	0.25	20%	90%
Flinders	0.26	0.26	15%	90%
North King	0.21	0.21	15%	90%

personal use only

Criteria	JORC Code Explanation	Commentary

Leatherwood	0.78	0.28	19.2%	95%
Blackwoods	0.18	0.18	10%	90%
Area 5 Quad 1	0.49	0.75	9.7%	90%
Area 5 Quad 2	0.67	0.62	10.7%	90%
Area 5 Quad 3	1.14	1.0	17.8%	90%
Area 5 Quad 4	0.99	1.05	17.7%	90%
Development			15%-20%	100%
Sill Pillar Stopes			10-20%	50-75%

- Inferred Resources (Inferred block model cells) mined as a consequence of mining Proven or Probable stopes are included in the Ore Reserve estimate at zero grade.
- A new exhaust airway is to be established from surface to 1020mRL (Area 5);
- Backfill facilities are to be established to manufacture the engineered fill materials for stopes in Area 5.
- Other Infrastructure requirements (other than future capital development) for the selected mining method are established.

Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	• The Renison mine produces a tin concentrate of grade varying between 50- 60 % Sn with internal process designed to reduce penalty metals such as iron, sulphur, tungsten and copper. • Processing of ore includes three stage crushing, ore sorting (XRF), primary grind, copper flotation and cassiterite flotation in addition to concentration. The method is proven and has been successfully operated for over 50 years. • The metallurgical recovery is estimated from plant feed grades in the LOM plan and are based on historical plant performance for the different ore types and grades. • Metallurgical recovery factors have been applied to different orebody domains. • The Ore Reserve estimate has been based on appropriate mineralogy and metallurgical factors to meet the existing concentrate off-take specifications.
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste*	• Renison operates under the conditions set out by an environmental license to operate. • Waste generated from Underground mining is kept in underground and used as backfill in

Criteria	JORC Code Explanation	Commentary
	rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	the mined voids. • Once the Paste Fill plant is commissioned in 2022, tailings will be utilised to generate a paste backfill product which will be pumped underground to fill stopes in Area 5 and Leatherwood mine areas.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• The Renison mine is currently active and has substantial infrastructure in place including a large amount of mine infrastructure, major electrical and pumping networks, and underground primary crusher and automated shaft hoist system, a 1,000,000tpa tin processing plant, a fully equipped laboratory, extensive workshop, administration facilities, tailing storage facilities and a 100 person single person quarters nearby.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	• Costs for the Renison mine are based on historical actual site costs and future budget estimates for all functions at the existing mine. • Capital underground development costs are derived from the LOM plan and actual costs as per above. • Other capital costs are related to planned equipment and infrastructure costs and are based on quotes or historical actual costs. • Closure costs are included in the LOM plan. • Tasmania government royalties are included. .
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• Revenue factors are based on metal production in concentrate from the LOM plan, a long-term tin price of Au$ 33,571 / tonne and USD/AUD exchange rate of 0.70 has been used to estimate the Ore reserves. • TC's, RC's, transport and marketing costs are based on current contracts with port and smelters.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.*	• The move towards renewable energy and battery technology is set to increase the demand on Tin. Limited supply and high demand will support a long-term elevation in the price of Tin.

personal use only

Criteria	JORC Code Explanation	Commentary
	• *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• As an operating mine, internal cash flow estimates apply an implied 8% real discount rate for NPV analysis and only economically viable ores are considered for mining. The mine is operated in a JV and carries limited debt, exclusive to financed equipment. • Sensitivity analysis of projected tin prices up to -15% estimate positive cash flow
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The Renison mine is fully permitted and a major contributor to the local and regional economy. It has no external pressures that impact its operation or which could potentially jeopardise its continuous operation.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	• Renison is an active mining project.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The classification adopted is based on the level of confidence as set out in the 2012 JORC guidelines • Proven Ore Reserves are based on Measured Resources subject to economic viability. • Probable Ore Reserves are based on Indicated Resources subject to the economic viability. • The estimate appropriately reflects the view of the competent person. Inferred Resources are included in the Ore Reserve estimate at zero grade where they are mined as a result of mining predominantly Measured or Indicated stopes and development.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• Resources and Reserves have in the past been subjected to external expert reviews, which have ratified them with no issues. The current resource and mine planning processes are periodically reviewed by independent consultants.

For personal use only

Criteria	JORC Code Explanation	Commentary
Discussion of relative accuracy / confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The relative accuracy of the Ore Reserve estimate is considered robust as it is based on the knowledge gained from extensive operational history of the mine. • All currently reported reserve estimations are considered representative on a local scale. Regular mine reconciliations occur to validate and test the accuracy of the estimates at Renison.

personal use only