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ASX:TOK

ASX Announcement

11 December 2023

Tolukuma Exploration Update

HIGHLIGHTS

- Fieldwork including surface trenching and drilling is planned in the next 12 months to test a number of nearby gold prospects at Tolukuma on both ML 104 and EL 2531.
- Significant strike extensions from historical ground based 3DIP conductivity geophysical results show an additional 2km of vein systems to the South Southeast from the main Tolukuma Vein, providing additional drill targets for planned near-term resource growth.
- Unmined deposits from underground drilling at Fundoot, Gulbadi Red & Mystery veins have an Inferred Mineral Resource of 133 koz gold.
- Additional near mine gold prospects include the Saki-Yava-Soju-Salat system of gold veins over a 3km wide zone of gold mineralisation and the 1,000m strike length Kimono gold mineralised structure 800m east of the mill.

Iain Macpherson, MD & CEO of Tolu Minerals Ltd. said:

"The grades and widths of these intercepts, taken with the continuity that is becoming increasingly apparent as highlighted by recent exploration activities coupled with analysis of historical results South of Fundoot is very pleasing and reaffirms the prospectivity not only of the Southern section of the mining lease, but also into Tolu's exploration licence EL 2531 to the South and East. This represents potentially significant continuity of the known high-grade epithermal system that was the basis for historical high-grade gold/silver production at Tolukuma.

The clear opportunities afforded by both Miliahamba-Kundu and Taula and associated mineralised structures will be central to Tolu's exploration programme targeting a significant

growth in the Mineral Resource. Further details of that exploration programme that will commence in the New Year, will be announced shortly."

Tolu Minerals Ltd. ("Tolu") is pleased to announce the results of historical 3DIP geophysics which shows the existing gold mineralised Tolukuma vein extending a further 2km to the South Southeast. The Miliahamba/Kunda vein appears along the same Tolukuma vein system offset by sinistral faulting identified from the geophysics. Historical drilling results at Miliahamba/Kunda vein include 1.8m @ 6.74 g/t Au from 26m with highly anomalous gold from surface samples, including a value of 1,043 g/t Au from the discovery outcrop (refer to ASX Announcement dated 13 November 2023).

From the 3DIP geophysics conductivity, the Gulbadi gold mineralised structure within ML 104 is also interpreted to extend a further 3km to the South Southeast into the Taula prospect area within EL 2531.

With the current endowment of 1.5moz in 1.5km of previously mined orebody at the Tolukuma Mine (Figure 1), significant strike extensions to the South, based on historical drilling, trenching and ground geophysics will aid in the planning of a major resource drilling programme over the next 12 months, both within the existing mining lease and the neighbouring EL 2531. Exploration on the adjacent exploration licences will help determine the potential for a major expansion and long Life of Mine strategy along existing gold structures and veins.



Figure 1: Tolu Minerals Ltd Gold Mine Area and Nearby Gold Prospects

Gold resources and prospects include:

- The existing Mineral Resource Estimate ("MRE") at Tolukuma (Figures 1 and 2) of 503 koz Au at 10g/t, including 91 koz at 13 g/t Au on the previously unmined Fundoot Structure (refer to ASX Announcement dated 4 December 2023).
- Significant strike extensions from historical ground based 3DIP conductivity geophysical results show an additional 2km of vein systems to the South Southeast from the main Tolukuma Vein (Figure 3).
- The Miliahamba/Kunda prospect trench results include 1.0m @ 85 g/t Au and drill results of 1.8m @ 6.74 g/t Au (refer to ASX Announcement dated 13 November 2023).
- Taula with drill results including 6.0m @ 16.16 g/t Au, Sisimonda with drilling results including 1.0m @ 31 g/t Au, and North Kunda with a reported chip sample assaying 1,034 g/t Au (refer to ASX Announcement dated 13 November 2023).
- The Saki gold system has an Exploration Target of 100,000oz to 300,000oz gold with a range of 600,000 to 1,000,000 tonnes grading 5.0 to 9.0 g/t gold, based on existing surface trench and drilling results (refer to ASX:LNR Announcement dated 7 October 2019).

- Saki has a reported Maiden Inferred Mineral Resource of 2.0 Mt @ 2.0 g/t gold for 128,000 oz Au (refer to ASX:LNR Announcement dated 28 February 2022).
- Saki-Yava-Soju-Salat system of gold veins (Figure 4) demonstrates a 3km wide zone of gold mineralisation with best trench sampling results at the Justin Vein of 1.0m @ 158.37g/t gold (refer to ASX:LNR Announcement dated 19 August2020).
- The Kimono gold mineralised structure which occurs 800m from the Tolukuma mine gold plant is at least 1,000 in strike length with trench results including 1m @ 30.1g/t Au (refer to ASX:LNR Announcement dated 22 November 2019).

Based on the MRE tonnes and grades, extension of the Tolukuma vein system 2km to the South Southeast, grades from the Miliahamba prospect drilling, grades from drilling at Taula, Sisimonda and Kimono, grades and tonnage of the Saki Inferred Mineral Resource and trench sampling grades from the broader Saki-Yava-Soju-Salat system of gold veins, Tolu has developed an Exploration Target of 2 to 3 Moz Au grading 8 to 11 g/t Au* (refer to Table 1).

*Cautionary Statement: The Exploration Target for the Tolukuma gold project, describing the potential quantity and grade, is conceptual in nature. There has been insufficient exploration completed to estimate a Mineral Resource for all target areas reported and it is uncertain if further exploration will result in the estimation of further Mineral Resources.

Tolukuma Project Gold Exploration Target – December 2023						
Project	Deposit	Rank	Low (tonnes)	High (tonnes)	Low (Gold)	High (Gold)
Tolukuma	Tolukuma Tolukuma South Miliahamba Taula Kimono Saki-Yava-Soju-Salat	High	7,800,000	8,500,000	8.0 g/t	11.0 g/t
Totals		7,800,000	8,500,000	8.0 g/t	11.0 g/t	

Table 1: Tolukuma Exploration Target Estimate



Figure 2: Oblique View of Near Term Mineral Resources for Immediate Upgrade



Figure 3: 3DIP Conductivity Results at Tolukuma South Showing Veins Systems at Depth



Figure 4: Saki-Yava-Soju-Salat System of Gold Veining

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This announcement has been authorised for release by the Directors of the Company. For additional information please visit our website at <u>www.toluminerals.com</u>

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TOLU MINERALS LIMITED

Competent Person Statement:

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The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by or compiled under the supervision of Peter Swiridiuk - Member of the Aust. Inst. of Geoscientists. Peter Swiridiuk is a Technical Consultant and member of the Tolu Minerals Ltd. Advisory Board. Peter Swiridiuk has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter Swiridiuk consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. Additionally, Mr Swiridiuk confirms that the entity is not aware of any new information or data that materially affects the information contained in the ASX releases referred to in this report.

TML Exploration Licence Information

Exploration Licence			Area		
Number and Name	Ownership	Sub-blocks	(sq.km)*	Grant Date	Expiry Date
ML104 – Tolukuma 100% TML		N/A	7.71	01-Sep-21	28-Aug-32
EL2531 – Tolukuma	100% TML	33	118.4	25-Feb-19	24-Feb-23
EL2385	100% TML	58	197	26-May-16	25-May22
EL2535	100% TML	8	27.3	24-Jan-22	25-Jan24
EL2536	100% TML	37	125.7	24-Jan-22	25-Jan-24
EL2538	100% TML	14	47.7	24-Jan22	25-Jan24
EL2539	100% TML	58	197.8	24-Jan22	25-Jan-24
EL2723	100% TML	108	368.28	8-Nov22	07-Nov-24
EL2662 – Mt. Penck	100% TML	60	204.48	26-Oct-21	25-Oct-23
ELA2780	100% TML	116	392.33	N/A	N/A
	Total of EL's and ML104	480	1,686.70		

*1 sub-block approximately 3.41 sq.km

Notes: The PNG Mining Act-1992 stipulates that EL's are granted for a renewable 2 year term (subject to satisfying work and expenditure commitments) and the PNG Government maintains the right to purchase up to 30% project equity at "Sunk Cost" if/when a Mining Lease is granted. Licences EL2531, EL2385 and EL 2662 are currently subject to an extension renewal process. The tenements remain in force until determinations are made by the Mining Advisory Council.

JORC Code Table 1, 2012 Edition – Report of Exploration Results

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. 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. 	 Historical drill core samples were sawn in two, with half returned to the core tray for visual inspection and the other half sent to the TGM lab for assaying. Downhole surveys were completed. Sampling was supervised and reported by on-site geologists to ensure sample representivity. Historical diamond core drilling was completed to obtain mineralised vein sections in multiples of 50cm. 2kg samples were oven dried for 6-8hrs @ 120DegC, crushed to -2mm, split by Riffle Jones splitter. 300g were pulverised to <75microns with >95% passing with a final 20g submitted for assay. Material aspects of the mineralisation are noted in the text of the document.
Drilling techniques	 Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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). 	 Drilling is exclusively diamond drilling. The diamond drill holes; (63.5/61.1 mm core diameter) and reducing to NQ/NQ3 (47.6/4 triple tube drilling was in place from at least 2007. No oriented core was collected. No drilling has been undertaken by Tolu Minerals Ltd (TOK).
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure 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. 	 Core was visually assessed on-site on tables constructed at the core shed. Historical drilling recovery was essentially 90 – 100% with an average of over 92%. Diamond impregnated bits and driller experience contributed to good core recoveries. No relationship exists between grade and recovery. Diamond core sample lengths were measured to maximise core recovery. Drilling recovery averages 92% across all lithologies No drilling has been undertaken by TOK.
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. 	 Drill core was sampled and logged on paper by an experienced geologist for alteration mineralogy, lithology and mineralisation. Geotechnical parameters included recovery, compressive strength and RQD to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Core trays were photographed in two trays at a time. Part of the logging included unconfined compressive strength estimations. Rock quality designation (RQD) was recorded but not retained. Logging was qualitative in nature and based on geological observations. Detailed geological descriptions were hand-written into a drill log for each core section and transferred to spreadsheets. The total length and 100% of all drill core was logged. No drilling has been undertaken by TOK.
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. 	 Historical drill core samples were sawn in two, with half returned to the core tray for visual logging and all the other half sent to the TGM lab for assaying. Drill half core 2kg samples were submitted to the Laboratory for sample preparation and assaying. Sampling was supervised by TGM's Senior Geologists by visual inspection. Core sample sizes of 50cm as determined by the geologist by visual inspection are appropriate for the quartz vein material being sampled.

Criteria	JORC Code explanation	Commentary		
	 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. 	 Core was transported to the on-site laboratory by vehicle or helicopter. Procedures of drying, crushing, splitting and pulverising was practiced by TGM local laboratories for analysis. Pulps were irregularly sent to an outside independent laboratory for quality checking. Soil samples were submitted to the TGM local laboratories. Sampling has been supervised by Senior Geologist and sample sized are appropriate for the quartz vein material being sampled. Sample preparation comprised drying and crushing each sample pulverising to 95% passing 75 microns, delivering a 250g split. 		
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. 	 Historical procedures undertaken by TGM were appropriate. Half drill core samples crushed and prepared as 20g samples for assaying for a partial aqua regia digest and AAS for Au, Ag, Pb, Cu, Zn, Sb and Fe. 0.5g samples were submitted for Hg by cold vapor AAS. The principle of Aqua Regia digest is that gold can be dissolved by a mixture of 3 parts hydrochloric acid to one part nitric acid. Acceptable levels of accuracy were obtained in the assaying results of Au 0.01 ppm, Cu 1 ppb & Ag 0.01 ppm. Duplicates were not reported. In 2007, check samples were taken and analysed, with blanks and standards but not recorded. No Geophysical tools were used downhole. 		
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. 	 Verified by senior TGM geologist and other geologists onsite at the time. No drilling has been undertaken by TOK. No drillholes have been twinned. All assay data is stored as digital Excel spreadsheets and stored in reports submitted to the MRA library in digital PDF and Excel formats. 		
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. 	 Drillholes were located using total station surveying. This is a local grid with local permanent survey markers. Map Datum is AGD66, however drilling within ML104 uses local mine grid. Topographic control is low with 40m contours from 1:100,000 plans and 10m contours from airborne DTM contours. 		
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. 	 Refer to any attached plans and tables for rock and trench/costean spacing. No drilling has been undertaken by TOK in any fieldwork program. Drill hole locations for the MRE and at Saki sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedures. Sample compositing was not applied. 		
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. 	 Historical drill holes are designed to intersect known mineralisation from surface trench results in a nominally perpendicular orientation as much as is practicable. Sample intervals are selected based upon observed geological features and the strike of the narrow quartz veins. Mineralisation is narrow 1-4m thickness. Drilling locations in the underground are limited and, in some cases apparent thickness due to low angles to vein orientation. 		
Sample security	The measures taken to ensure sample security.	 Access to the mine site is controlled and drill samples were stored on-site in a remote location. Site employees transport samples to the analytical lab. The laboratory compound is secured by security guards 		

Criteria	JORC Code explanation		Commentary
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	•	Audits of data, drilling, sampling and assay methods are recorded in reports from 2007, 2013, 2015 and 2017.

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. 	 Tolu Minerals Limited have a 100% ownership of Mining Lease ML104 and Exploration Licence EL2531. There are no joint ventures or partnerships in place. There are no known impediments to operating in ML104 and EL2531.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	 EL2531 and ML104 were initially stream sampled by Kennecott in the 1960's afterwards by CRAE who completed both steam sediment sampling and rock chip sampling. Newmont 1985-1988 discovered the Tolukuma vein and completed costean and soil sampling and diamond drill holes testing the NW-SE Taula Vein. Newmont completed resource drilling and mine feasibility studies. From 1989-1992 Newmont completed 2nd phase drilling. Dome Resources purchased the Exploration license from Newmont in 1992 and completed feasibility studies in the ML104, granted in 1994, with first gold poured in December 1995. In 2000, Durban Roodepoort Deep purchased Dome Resources and took over all its interests in PNG. TGM's work programs (now 100% DRD included trench sampling and mapping. Work commenced at Saki in 2002 with a programme of extensive trench sampling and mapping and drilling at the Kunda prospect Petromin PNG Holdings acquired 100% of the Tolukuma projects including ML104 from Emperor Mines in 2008. Singapore company Asidokona purchased Tolukuma Gold Mines Ltd from Petromin (PNG Government) in November 2015. The Tolukuma gold mine was held under the control of the MRA and the appointed liquidator/administrator until 100% ownership of ML104 was granted to Tolu Minerals Ltd 3rd October 2022 along with its associated assets and mine infrastructure to re-establish mining operations and re-commence exploration and resource drilling. In November 2023, Tolu Minerals Limited secured ownership of EL2531 through its acquisition of Frontier Copper PNG Limited, which was previously a wholly owned subsidiary of ASX listed, Lanthanein Resources Limited.
Geology	Deposit type, geological setting and style of mineralisation.	 The Tolukuma vein system is a single epithermal vein system consisting mainly quartz with minor sulphides including pyrite, marcasite, cinnabar and associated mangano-carbonate and gold mineralisation. The quartz veins are hosted within rocks of the Pliocene to Miocene Mt. Davidson Volcanics comprised of a complex of Andesitic flow units and Pyroclastic flow units that have been subsequently intruded by quartz Diorites and Monzonites. The dominant lithology is basaltic andesites with minor agglomerate breccias and tuffaceous volcanics, which are members of the Boundary Volcano Suite. The Kagi Metamorphics comprise the basement rocks in the Tolukuma area. A sequence of subaerial

Criteria	JORC Code explanation	Commentary		
Drill hole	A summary of all information material to the understanding of	 volcanics of Middle Miocene to Early Pliocene age unconformably overlies the metamorphic basement rocks. Small stocks, 1-5km across, of diorite, porphyritic microdiorite, hornblende-feldspar porphyry, monzonite and granodiorite have been mapped intruding the Kagi Metamorphics and Mt. Davidson Volcanics in the licence area. No drilling has been undertaken by TOK in any 		
Information	 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. 	 fieldwork program. A summary of all historical drillhole and geophysical anomaly information is noted within Tables in the text of this report or referenced reports. Tolu has acquired historical reports with drillhole and trench information that have been reviewed and interpreted. Digital databases have also been acquired over all known prospects within ML104 and EL2531. 		
Data aggregation methods	 In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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. 	 Exploration results are reported typically within epithermal veins. Trench grades are compiled using length weighting. No metal equivalent values are used. 		
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 (eg 'down hole length, true width not known'). 	 The relationship between historical mineralisation widths & intercept lengths from trench/costeans is well understood. Historical drillholes are generally targeted perpendicular to known veins. True width projections are noted in Tables where relevant within the text of this report. No drilling has been undertaken by TOK in any fieldwork program. 		
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. 	 Appropriate maps, sections and tabulations of drillhole, intercepts are included where relevant. 		
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. 	 Comprehensive reporting of all drilling results has occurred in historical ASX releases (ASX:LNR and ASX:TOK) and reported here where appropriate. 		
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. 	 All meaningful exploration data to date has been included in this ASX announcement and the TOK IPO Prospectus. Strength classification has been completed on all drill core. 		
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. 	 Current TOK exploration is aimed at testing for lateral extensions of known veins and interpreted vein systems that form part of the Tolukuma gold mine mineralised vein system. Appropriate plans are included where possible. The nature of planned further work is provided in the body of text. 		