PAN ASIA METALS

ASX Announcement | June 28, 2022

Inaugural Mineral Resource Estimate
Reung Kiet Lithium Prospect, Thailand

HIGHLIGHTS

- Inferred Mineral Resource Estimate at a 0.25% Li_2O lower cut-off of:

10.4Mt @ 0.44% Li_2O, 0.04% Sn, 0.009% Ta_2O_5, 0.16% Rb and 0.02% Cs

- Resource contains approximately 45,600t of Li_2O, or approximately 113,000t of LCE
- Mineralisation commences at surface and remains open along strike and at depth
- Mineralisation has geometry amenable to open cut mining
- Drilling continues, aiming to the increase size and confidence of the Mineral Resource
- Resource upgrade targeted for delivery later this year
- Scoping Study expected later this year
- Metallurgical test work underway for incorporation into Scoping Study
- Ore sorting test work will test potential to increase ROM head grade
- Potential for numerous by-products for local markets such as Sn-Ta concentrates, fine sand/feldspar and clay concentrates, bulk and crushed waste rock products.
- Potential for production of rubidium and caesium compounds, as well as potassium and calcium compounds, depending on processing routes selected

PAM aims to produce battery grade lithium compounds in Thailand

- Thailand's large vehicle manufacturing industry is transitioning to EV production
- Demand for Li-ion batteries in all forms is increasing, supply demand projections support tight markets
- Current lithium compounds at near record prices, with battery grade Li_2CO_3 in China trading at almost $US72,000/t

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Specialty metals explorer and developer **Pan Asia Metals Limited (ASX: PAM) ('PAM' or 'the Company')** is pleased to announce an inaugural Mineral Resource Estimate (MRE) for its 100% owned Reung Kiet Lithium Project (RKLP) located in southern Thailand. The MRE was estimated by CSA Global in accordance with the JORC Code (2012). CSA Global's Mineral Resource Report for RKLP and Table 1 of the JORC Code are reported in Appendix 1.

The MRE is classified in the Inferred category at a 0.25% Li_2O lower cut-off. The current Mineral Resource at RKLP is:

10.4Mt @ 0.44% Li_2O, 0.04% Sn, 0.009% Ta_2O_5, 0.16% Rb and 0.02% Cs

Pan Asia Metals Managing Director Paul Lock said: *"This is the outcome we were looking for, the Mineral Resource Estimate or MRE contains about 113,000t LCE. Importantly the mineralisation at Reung Kiet remains open along strike to the north, south and at depth. The MRE is based on drill holes RKDD001 through RKDD046. We are now drilling RKDD073 and 074 and have a minimum 20 additional holes planned. This will entail both infill and extensional drilling, which should enable PAM to report an upgraded MRE for the Reung Kiet Prospect later this year, in which we can expect to see an increase in the Resource tonnes and the conversion of the Resource from an Inferred to an Indicated and possibly Measured classification under the JORC Code.*

Although the MRE grade is directly in line with, or greater than our lepidolite peers, we do see potential to increase the ROM grade. This is a function of our geology, being largely a pegmatite dyke-vein swarm, and the block model used to define the resource. Working with a 5 x 5 x 10m block model means that we capture low grade or waste siltstone in the block, which will see the average grade of the MRE diluted, as much of the lithium mineralisation is contained within the pegmatite. Ore sorting can address this by rejecting the siltstone, and is being used successfully on many projects globally, and will form part of PAM's scoping study work. If successful, and we see no real reason why it would not be, we would see an uplift in the head grade to the beneficiation plant, which means that we would be processing a higher grade ore than that reflected in our MRE. We expect to report on this work later this year. Further, our metallurgical work will investigate the quantum of tin and tantalum that can be extracted during beneficiation as well as the potential for the production of industrial grade bulk materials such as feldspar and quartz, and our process route selection will *determine whether we can extract potassium, rubidium and caesium as well as other industrial chemicals.*

Upon completion of drilling at Reung Kiet we will move the drilling rigs to the Bang I Tum Prospect, where the program will continue the investigative drilling commenced early in 2021, which identified a pegmatite dyke swarm which is greater than 100m in width."

Mineral Resource Estimate

The Reung Kiet Lithium Project (RKLP) is one of PAM's key assets. RKLP is a hard rock lithium project with lithium hosted in lepidolite/muscovite-rich pegmatites chiefly composed of quartz, albite, lepidolite and muscovite, with minor cassiterite and tantalite as well as other accessory minerals, including some rare earths. Previous open pit mining extracting tin and tantalum from the weathered pegmatites was conducted into the early 1970's and was focused on the northern half of the Mineral Resource trend.

PAM has been conducting diamond drilling at RKLP for nearly 18 months, and drilling continues. The inaugural Mineral Resource estimate at RKLP is based upon 46 diamond drillholes. The Mineral Resource is spilt into two categories based upon the weathering profile. There is an oxide/transitional portion and a fresh rock portion as shown in Table 1.

The oxide & transitional portion of the Mineral Resource is composed of variably weathered to totally oxidized rock with some minor fresh rock in the transitional zone. The oxide/transitional Mineral Resource Estimate is 3.2Mt @ 0.49% Li_2O, 0.03% Sn, 0.009%Ta_2O_5, 0.15% Rb and 0.02% Cs. The oxide/transitional zone extends from surface up to 70m vertically below surface and is chiefly composed of deeply weathered to completely oxidised siltstone and pegmatite, with increased levels of kaolin. Test work to date suggests that lithium is recoverable to a lepidolite concentrate from the oxide zones at RKLP.

The fresh rock Mineral Resource is that part of the deposit that occurs below the base of the oxide-transitional zone. The fresh Mineral Resource Estimate is 7.2Mt @ 0.42% Li_2O, 0.04% Sn, 0.009% Ta_2O_5, 0.16% Rb and 0.02% Cs.

Table 1. RKLP Inferred Mineral Resource

	Million Tonnes	Li_2O %	Sn %	Ta_2O_5 %	Rb %	Cs %	LCE (t)
Oxide & Transitional	3.2	0.49	0.03	0.009	0.15	0.02	38,611
Fresh	7.2	0.42	0.04	0.009	0.16	0.02	74,416
Total	**10.4**	**0.44**	**0.04**	**0.009**	**0.16**	**0.02**	**113,027**

Geology & Mineralisation

The Reung Kiet Lithium Project is situated in the Western Granite Province of the South East Asian Tin and Tungsten Belt. In the project area Cretaceous to Tertiary aged granites intrude older Permo-Carboniferous glacio-marine meta-sedimentary rocks of the Phuket Group. Lepidolite rich pegmatites and associated quartz feldspar pegmatites intrude the sediments of the Phuket Group along the NE trending Phang Nga Fault Zone.

The Mineral Resource is hosted in an aplo-pegmatite dyke and vein swarm intruding pebbly siltstone. Lithium mineralisation is contained in lithium-rich micas, mostly lepidolite and some muscovite disseminated through the dykes and veins. Some lithium mineralisation also occurs with the micas in the siltstone adjacent to the aplo-pegmatite dykes and veins, but generally at lower grades.

Sampling and sub-sampling techniques

Samples for assay are half drill core, cut from the whole drill core at intervals averaging 1m in length. The core samples are prepared by ALS Global in Vientiane where the sample is fine crushed to 70% passing 2mm and a sub-sample up to 1.2kg is taken using a rotary splitter. This sample is then pulverised to 85% passing 75 microns. A smaller sub-sample of approximately 100g is sent to ALS Global in Vancouver for analysis. The sample preparation method is ALS method Prep-31BY.

Drilling techniques

The MRE is based on 7279.7m of diamond drilling in 46 holes. Most of this drilling is HQ3 (61.1mm) diameter with some NQ3 (45.1mm) diameter core in deeper areas. Triple tube methods are employed so as to maximize core recovery.

Resource Classification – Drill and data spacing and distribution

The Mineral Resource is classified as 100% Inferred. Drill spacings are locally down to 50m x 50m nearer surface and become wider spaced in many areas particularly as depth increases. The drilling covers approximately 1km of strike length and has targeted mineralisation from surface to maximum depths of approximately 200m below surface. The bulk of the Mineral Resource defined is less than 150m below surface.

Sample Analysis

All samples have been analysed for Li by ALS Global using ALS methods Li-OG63 or ME-ICP89L. Multi-element analysis is also reported for method ME-ICP89L. For some holes Sn, Ta, Rb and Cs analysis are derived from the Company's hand-held XRF.

Estimation methodology

Wireframes were interpreted using a 0.10% Li_2O cut-off in combination with geology. Drill assays were used to interpolate grades into blocks using Localised Multivariate Uniform Conditioning and Ordinary Kriging. The blocks are predominantly 5m wide, 5m high and 10m long. Several methods were used to validate the estimated results including grade-tonnage curves using a change of support model, visual review and comparison of sampling results and block model grades.

Cut-off grades and basis of selection

The Mineral Resource is reported at a lower cut-off grade 0.25% Li_2O. It is reasonable to expect that at a 0.25% Li_2O cut-off grade that an average head grade of 0.45% Li_2O can be achieved over the Life of Mine. PAM has benchmarked mining costs and metallurgical processing recoveries and costs. This has indicated that there are reasonable prospects for economic extraction. The Mineral Resource is also reported at various other cut-off grades below and above 0.25% Li_2O, as reported in Table 2, which indicates a substantial amount of LCE occurs when lower cut-off grades are used. It may be possible that a lower cut-off grade is eventually used.

Table 2. RKLP Mineral Resource at various cut-off grades

Cut-off	Million Tonnes	Li_2O %	Sn %	Ta_2O_5 %	Rb %	Cs %	LCE (t)
0.00	28.5	0.24	0.03	0.005	0.12	0.02	168,948
0.10	21.5	0.30	0.03	0.007	0.13	0.02	159,315
0.15	17.1	0.34	0.03	0.007	0.14	0.02	143,606
0.20	13.3	0.39	0.04	0.008	0.15	0.02	128,119
0.25	**10.4**	**0.44**	**0.04**	**0.009**	**0.15**	**0.02**	**113,027**
0.30	8.2	0.48	0.04	0.009	0.16	0.02	97,219
0.35	6.3	0.53	0.04	0.010	0.17	0.02	82,473
0.40	4.9	0.58	0.04	0.011	0.17	0.02	70,197
0.45	3.8	0.62	0.05	0.011	0.18	0.02	58,193
0.50	2.9	0.67	0.05	0.012	0.18	0.02	47,992

Mining and metallurgical methods and parameters, and other modifying factors

Conventional open pit mining is considered to have the potential to recover much of the Mineral Resource, with some considerations given to underground mining of the deeper zones. Metallurgical methods envisage the production of a lepidolite/muscovite concentrate. This concentrate can then be processed into selected lithium compounds and associated by-products. These processing methods are either in operation or have been demonstrated to at least Pre-Feasibility level. Other modifying factors such as proximity to infrastructure and markets have also been considered along with broad environmental considerations.

Forward Work Plan

PAM has continued drilling since "closing off" the data for the inaugural MRE at drillhole RKDD046. Since that time an additional 27 holes have been completed and PAM expects to complete another 20 or so holes in this program (see Figure 1).

Results for drill-holes RKDD0047 onwards will be reported when available. This program, which consists of infill and extensional drilling, will be incorporated into an updated Mineral Resource Estimate later in the year. The aim of this drilling is to both increase the existing Mineral Resource and also upgrade the classification of the Mineral Resource from Inferred to Indicated, with some Measured possible. The new Mineral Resource will allow for more robust mining studies to be undertaken as part of the Scoping Study and into Pre-Feasibility work.

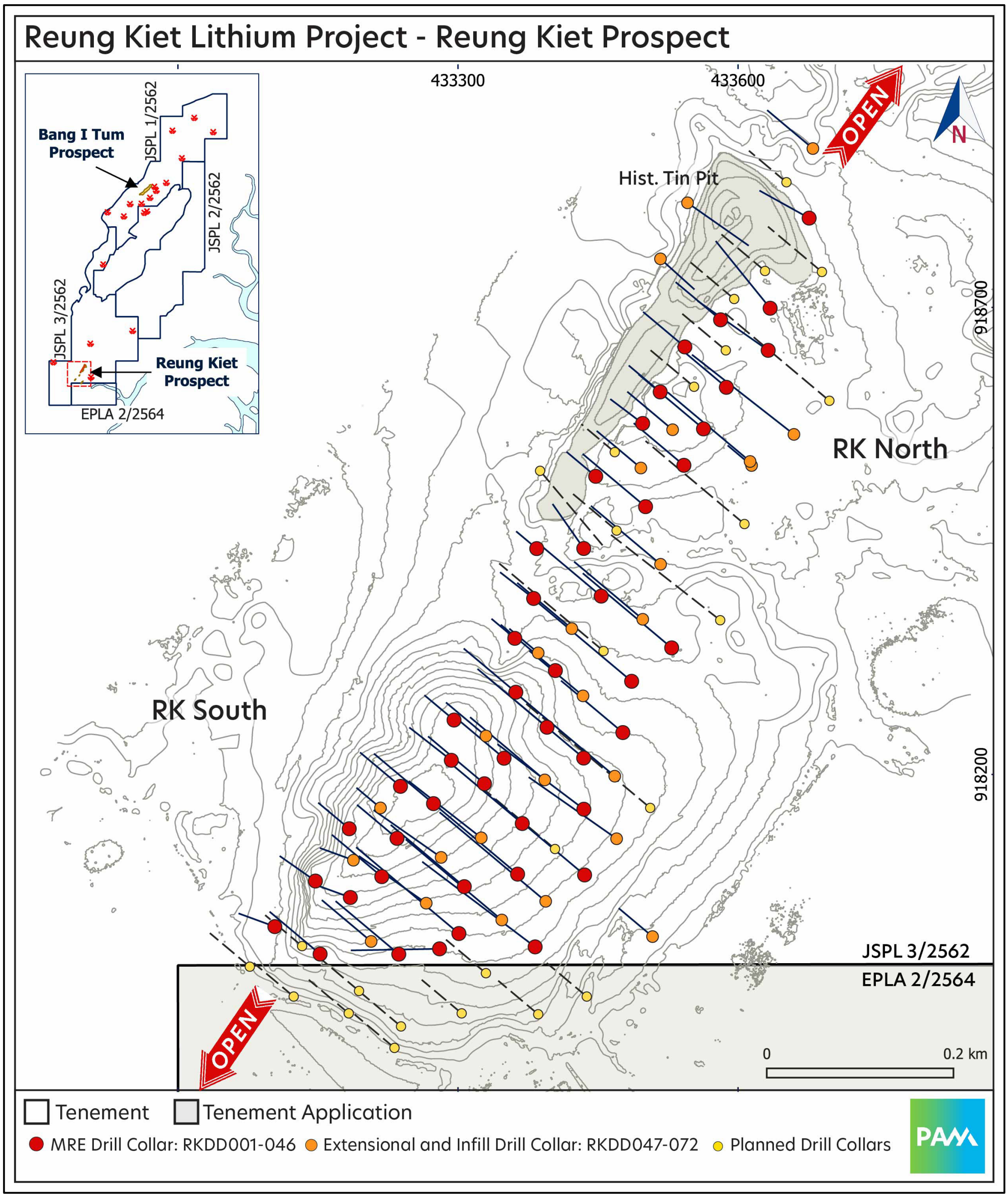


Figure 1: Reung Kiet Lithium Project, MRE collars and subsequently drilled and planned drill holes

At the southern end of Reung Kiet where mineralisation remains open, PAM awaits the grant of EPLA 2/2564. Once this licence is granted PAM will be able to conduct extensional drilling, as well as targeting depth extensions. Data generated by this drilling will also be incorporated into a Mineral Resource update later this year.

PAM is currently conducting metallurgical test-work to optimize the recovery of lepidolite/muscovite to a concentrate. The concentrate produced in this test work will then be used to test various downstream processing methods to produce a variety of lithium compounds and various potential by-products. PAM will also investigate the potential to recover Sn-Ta, sand and clay concentrates as well as the potential for chemical by-products such as Rb, Cs, K, Ca and Si compounds.

PAM will also conduct ore sorting test work. This will investigate the potential to separate and recover the higher grade pegmatite from the lower grade adjoining siltstone, and therefore increase the Li_2O head grade.

Results of these programs will be reported when available and will be incorporated into the Scoping Study due for completion later this year.

Ends

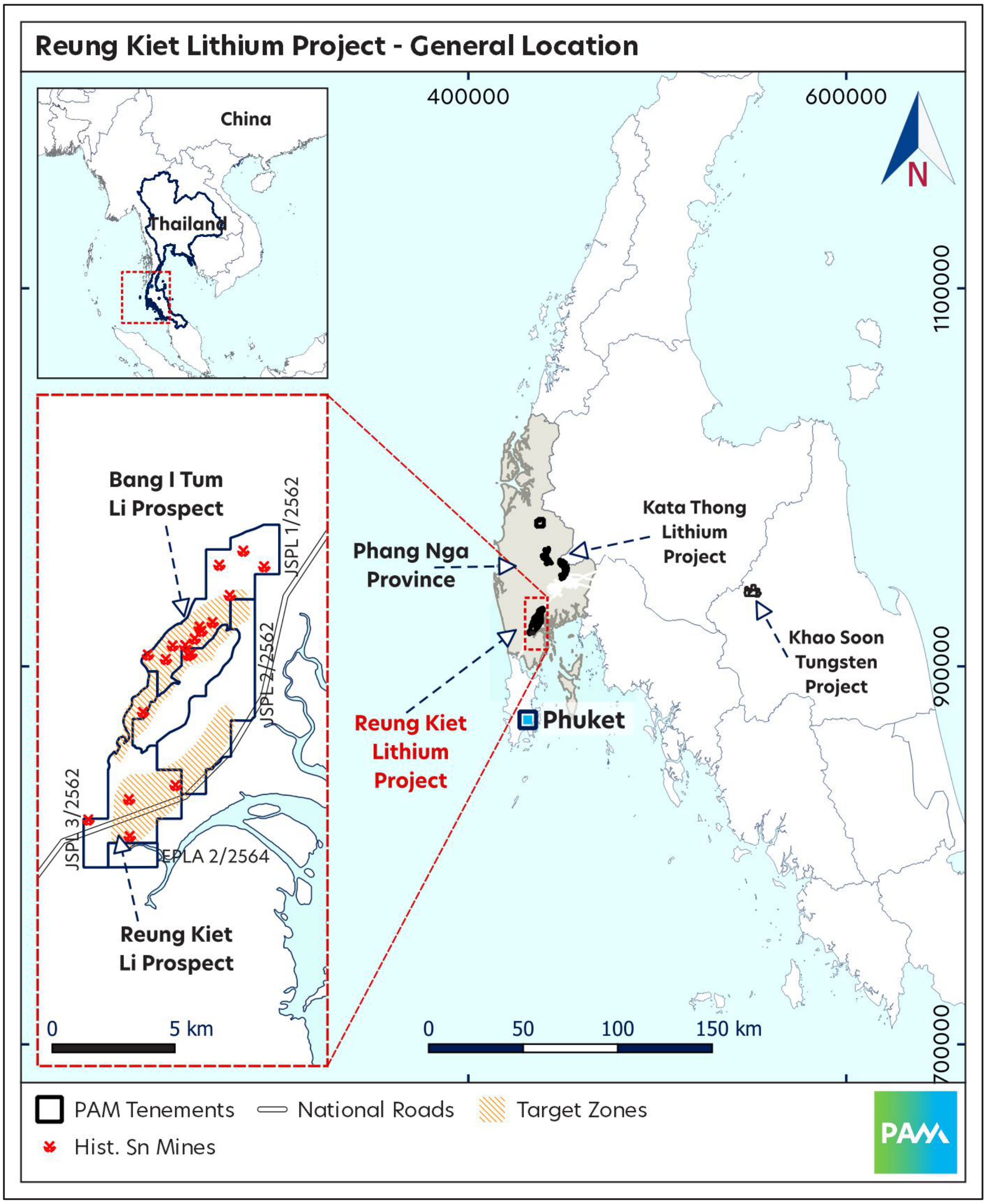
Authorised by:
Board of Directors

Lithium Conversion Table

To Convert From	Chemical Formula	Multiply By to Convert To		
		Lithium (Li) Content	Lithium Oxide (Li_2O) Content	Lithium Carbonate Equivalent
Lithium	Li	1	2.153	5.323
Lithium Oxide	Li_2O	0.464	1	2.473
Lithium Carbonate	Li_2CO_3	0.188	0.404	1
Lithium Hydroxide Monohydrate	$LiOH.H_2O$	0.165	0.356	0.880

About the Reung Kiet Lithium Project

The Reung Kiet Lithium Project is a lepidolite style lithium project located about 70km north-east of Phuket in the Phang Nga Province in southern Thailand. Pan Asia holds a 100% interest in 3 contiguous Special Prospecting Licenses (SPL) and 1 Exclusive Prospecting License Application covering about 40km².



Regional map: Location of Phang Nga and the Reung Kiet Lithium Project

About Pan Asia Metals Limited (ASX:PAM)

Pan Asia Metals Limited (ASX:PAM) is a battery and critical metals explorer and developer focused on the identification and development of projects in Asia that have the potential to position Pan Asia Metals to produce metal compounds and other value-added products that are in high demand in the region.

Pan Asia Metals currently owns three lithium projects and one tungsten project. The projects are located in Thailand, a low cost advanced industrial economy, and fit Pan Asia Metal's strategy of developing downstream value-add opportunities situated in low-cost environments proximal to end market users.

Complementing Pan Asia Metal's existing project portfolio is a target generation program which identifies desirable assets in the region. Through the program, Pan Asia Metals has a pipeline of target opportunities which are at various stages of consideration. In the years ahead, Pan Asia Metals plans to develop its existing projects while also expanding its portfolio via targeted and value-accretive acquisitions.

To learn more, please visit: www.panasiametals.com

Stay up to date with the latest news by connecting with PAM on LinkedIn and Twitter.

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Stay up to date and be informed by scanning this QR Code, we will deliver the latest news and updates directly to you.

Competent Persons Statement

The information in this report that relates to Mineral Resources is based on information compiled by Ms Millicent Canisius and Mr Anthony Wesson, both full-time employees of CSA Global. Mr Anthony Wesson is a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy and Ms Millicent Canisius is a Member of the Australasian Institute of Mining and Metallurgy. Mr Anthony Wesson and Ms Millicent Canisius have sufficient experience, relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking, to qualify as Competent Persons as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Anthony Wesson and Ms Millicent Canisius consent to the disclosure of the information in this report in the form and context in which it appears. Ms Millicent Canisius assumes responsibility for matters related to Sections 1 and 2 of JORC Table 1, while Mr Anthony Wesson assumes responsibility for matters related to Section 3 of JORC Table 1.

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Various statements in this document constitute statements relating to intentions, future acts and events which are generally classified as "forward looking statements". These forward looking statements are not guarantees or predictions of future performance and involve known and unknown risks, uncertainties and other important factors (many of which are beyond the Company's control) that could cause those future acts, events and circumstances to differ materially from what is presented or implicitly portrayed in this document. For example, future reserves or resources or exploration targets described in this document may be based, in part, on market prices that may vary significantly from current levels. These variations may materially affect the timing or feasibility of particular developments. Words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates", "potential" and similar expressions are intended to identify forward-looking statements. Pan Asia Metals cautions security holders and prospective security holders to not place undue reliance on these forward-looking statements, which reflect the view of Pan Asia Metals only as of the date of this document. The forward-looking statements made in this document relate only to events as of the date on which the statements are made. Except as required by applicable regulations or by law, Pan Asia Metals does not undertake any obligation to publicly update or review any forward-looking statements, whether as a result of new information or future events. Past performance cannot be relied on as a guide to future performance.

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APPENDIX 1 - Reung Kiet Lithium Project, Thailand Mineral Resource Estimate

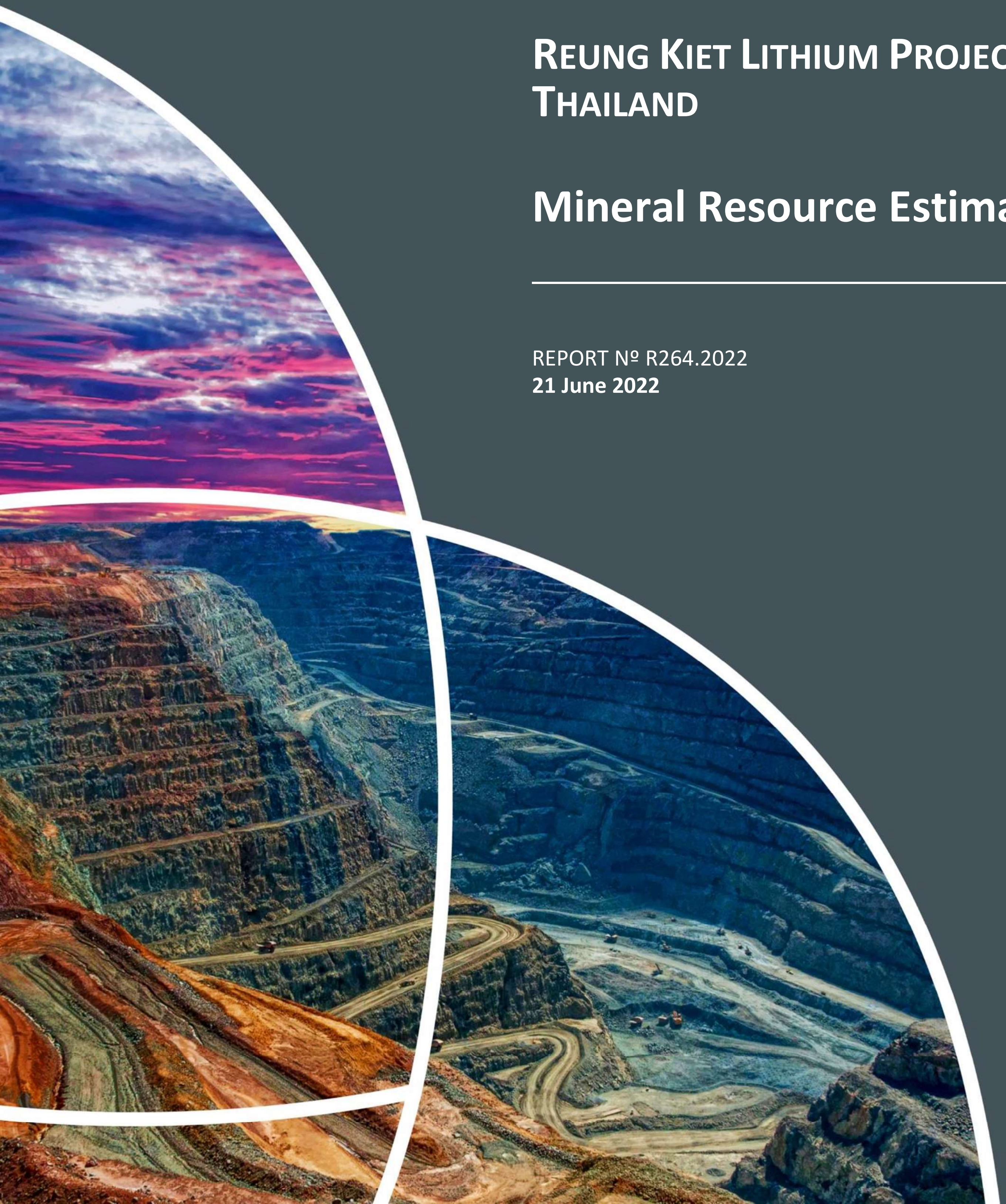
REPORT Nº R264.2022

CSA Global
Mining Industry Consultants
an ERM Group company

Reung Kiet Lithium Project, Thailand

Mineral Resource Estimate

REPORT № R264.2022
21 June 2022



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Disclaimers

Purpose of this document

This Report was prepared exclusively for Pan Asia Metals Limited ("the Client") by CSA Global Pty Ltd ("CSA Global"), an ERM Group company. The quality of information, conclusions, and estimates contained in this Report are consistent with the level of the work carried out by CSA Global to date on the assignment, in accordance with the assignment specification agreed between CSA Global and the Client.

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Results are estimates and subject to change

The interpretations and conclusions reached in this Report are based on current scientific understanding and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty.

The ability of any person to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond CSA Global's control and that CSA Global cannot anticipate. These factors include, but are not limited to, site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalise the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments. Any of these factors may substantially alter the performance of any mining operation.

Executive Summary

CSA Global Pty Ltd (CSA Global), an ERM Group company, was commissioned by Pan Asia Metals Limited (PAM) to assist with compilation of drilling, assaying and logging records, geological modelling and to prepare a Mineral Resource estimate (MRE) for the Reung Kiet lithium deposit, located in Thailand.

The main objective of the proposed work was to report a MRE prepared in accordance with the JORC Code 2012[1] for the Reung Kiet Lithium Project ("RKLP" or "the Project") located in southern Thailand. The MREs will be used for public reporting and a representative from CSA Global will be required to act as Competent Person. The MRE reports grades and tonnages for Li_2O, tin and tantalum, caesium and rubidium.

CSA Global considers that, while data collection techniques are largely consistent with accepted industry practices, at present data are only sufficient for CSA Global to classify the resource in the Inferred category. With additional drilling, density measurements and additional assaying quality assurance and quality control (QAQC), there is potential to upgrade the resource category.

Diamond core samples were used to interpolate grades into blocks using localised multivariate uniform conditioning and ordinary kriging. Several methods were used to validate the estimated results including grade-tonnage curves using a change of support model, visual review and comparison of sampling and block model grades. It is reasonable to expect that at a 0.25% Li_2O cut-off grade, an average head grade of 0.45% Li_2O can be achieved over the life of mine.

PAM has the aim to mine lepidolite-bearing ore to produce a lepidolite concentrate via flotation, and then to process the concentrate into lithium chemicals, being one or more of lithium carbonate (Li_2CO_3), lithium hydroxide (LiOH), and lithium phosphate (Li_3PO_4). There is also potential for a suite of by-products depending upon the treatment methods ultimately employed.

Previous PAM work conducted on weathered pegmatite from mostly trench and some rock-chip samples, showed +93.3% lithium recovery to flotation rougher concentrate, grading 2.76 % Li_2O. In new and current work, preliminary results at this stage indicate lithium recoveries in oxide material are around 65% and >80% in fresh rock. The flotation testwork is ongoing and is yet to be optimised. However, it is a reasonable expectation that 70–80% of the lepidolite can be recovered to a concentrate grading between 3% Li_2O and 4% Li_2O over the life of the Project.

Assuming a mining rate of between 1.0 Mtpa and 1.5 Mtpa, a head grade of 0.45% Li_2O, which is equivalent to 1.11% lithium carbonate equivalent (LCE), and recoveries of 65%, PAM has benchmarked mining costs, and metallurgical processing recoveries and costs, and has shown, that there are reasonable prospects for eventual economic extraction.

Table 1 and Table 2 present the MRE for oxides and transition, and fresh ores, respectively. The cut-off applied is the lithium oxide grade (Li_2O) as requested by PAM. Percentages have been rounded to 2 decimals.

Table 1: Global Oxide and Transition Inferred Mineral Resources and at a 0.25% Li_2O cut-off

Cut-off (Li_2O)	Oxide and Transition	Lithium			Tin		Tantalum		Caesium		Rubidium	
	Total tonnes	Metal tonnes	Mean Li%	Mean Li_2O%	Metal tonnes	Mean Sn%	Metal tonnes	Mean Ta_2O_5%	Metal tonnes	Mean Cs%	Metal tonnes	Mean Rb%
0	5,500,000	8,800	0.16	0.34	1,100	0.02	380	0.01	1,200	0.02	7,200	0.13
0.25	3,200,000	7,000	0.23	0.49	800	0.03	280	0.01	800	0.02	4,700	0.15

Note: To convert Li_2O to Li_2CO_3, multiply the Li_2O grade by 2.473.

Table 2: Global Fresh Inferred Mineral Resources and at a 0.25% Li_2O cut-off

Cut-off (Li_2O)	Fresh Ore	Lithium			Tin		Tantalum		Caesium		Rubidium	
	Total tonnes	Metal tonnes	Mean Li%	Mean Li_2O%	Metal tonnes	Mean Sn %	Metal tonnes	Mean Ta_2O_5%	Metal tonnes	Mean Cs%	Metal tonnes	Mean Rb %
0	23,000,000	23,000	0.10	0.22	7,700	0.03	1,200	0.01	3,300	0.01	26,300	0.11
0.25	7,200,000	14,000	0.20	0.42	3,100	0.04	600	0.01	1,400	0.02	11,200	0.16

LCE is the industry standard terminology for, and is equivalent to, lithium carbonate, Li_2CO_3. Use of LCE is to provide data comparable with industry reports and is the total equivalent amount of lithium carbonate.

CSA Global recommends that the following actions be undertaken in support development of the Project and improving confidence in the MRE:

- The lithology logging should not include gaps but form a continuous sequence of records as observed in the drill core. Sampling of intervals within the broad mineralisation envelope is not essential but unless pegmatite dykes and vein swarms are modelled individually and exclude low grade or unmineralised siltstone, internal low grade or unmineralised siltstone intervals must be included in the broad mineralisation envelope. While these intervals may be in background siltstone lithology, they will be used in the MRE, and the siltstone has been found to occasionally carry some elevated lithium grades.
- The use of an industry standard database system to collect and store the drilling information is recommended. This will reduce transcription errors and help secure the data for the Project.
- CSA Global recommends that PAM uses commercially certified reference material (CRM) for quality control checks. Any analytical issues with the primary laboratory can be picked up promptly and rectified.
- In addition to extensional drilling along strike and down-dip, down-dip infill drilling should be undertaken as in this direction variography, and a general understanding of the grade distribution is compromised by a lack of data.
- Establish written procedures for capturing and validating/visualising drillhole information, including logging and sampling and assaying QAQC, and keep them up to date.
- Although the controls to the mineralisation are relatively well understood, continued development of the geological model is recommended to support future Mineral Resource estimation.
- Purchase commercially available CRMs or prepare standard reference materials (SRMs) from weathered through to fresh materials.
- Assay the coarse blank material before use to confirm that elements of interest are undetectable.
- Analyse the field duplicate data for tin, tantalum, rubidium and caesium to make a complete package.
- Re-assay the pulps for the samples analysed by x-ray fluorescence (XRF) method using the industry standard method.
- Select some pulps and send them to an umpire laboratory for check assays.
- Collect specific gravity (SG) measurements in Zone 1 and Zone 3 and augment those in Zone 2 oxide and transition mineralisation.
- While PAM used internal refence material for the quality control of the data, the reference material did not have certified expected results for lithium, tin, tantalum, rubidium, and caesium. The accuracy and performance of the laboratory could not be checked using the internal reference material. PAM is strongly encouraged to purchase commercially CRMs for future drilling programs.
- The CRM results should be reviewed while the data are being collected so that corrective action can be taken if the laboratory is not performing to the expected standard. PAM is also encouraged to routinely select pulps and send them to an umpire laboratory for check assays as a way of verifying the primary laboratory performance and enhancing the confidence in the assay data.
- Establishment of the mine geology system should be considered well in advance of mining. Systems to ensure development of the geological model, high-quality sampling, rapid capture and storage of data, quality control assessment, robust ore block interpretation, minimisation of ore loss and dilution, production tracking and reporting, and reconciliation should be established.
- CSA Global supports the PAM forward plan for undertaking additional infill and extensional drilling at the deposit, in conjunction with carrying out mining and metallurgical studies to support potential mine development scenarios.

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1 Introduction

1.1 Context, Scope, and Terms of Reference

The Reung Kiet Lithium Project ("RKLP" or "the Project") is situated in the Simbumasu block which hosts the Western Province of the South-East Asian Tin and Tungsten Belt. In the Project area, Cretaceous to Tertiary aged granites intrude Permo-Carboniferous aged sedimentary rocks of the Kaeng Krachan Group comprising interbedded mudstone, "pebbly mudstone", siltstone and sandstone.

Lepidolite bearing aplo-pegmatites and most of the associated quartz-feldspar pegmatites intrude parallel to Phang Nga Fault Zone and were emplaced into sediments of the Kaeng Krachan Group within a distance of ~3 km from the margins of the Khao Po and Khao Plai Bang To granites, but always outside their margins. The sediments, which comprise turbidites and pebbly mudstones, are metamorphosed to lower greenschist facies up to 2 km from the granite margins. Neither the extent nor degree of alteration nor the composition of the wall-rocks appear to have been significant factors in controlling the position of intrusion of the lepidolite pegmatites.

Lithium mineralisation is hosted in a lepidolite rich aplo-pegmatite dyke-vein swarm which intrudes the Kaeng Krachan Group sedimentary rocks parallel to the northeast trending Phang Nga Fault Zone. The lepidolite rich pegmatites belong to the lithium-caesium-tantalum (LCT) family of pegmatites.

Based upon limited x-ray diffraction (XRD) and optical microscopy, the mineralogy of the pegmatites is quartz, lepidloite and feldspar (albite), with minor tin-tantalum minerals, topaz, ilmenite and rare earths. In the weathered zone, feldspar has decomposed into kaolin. Lepidolite is the only lithium-bearing mineral so far identified and occurs in weathered and fresh rock. The RK pegmatite trend is divided into two main parts, Reung Kiet North and Reung Kiet South, each about 500 m long. Reung Kiet North includes the old open cut and immediate surrounds. Reung Kiet South extends along strike to the southeast and encompasses a prominent knoll. At Reung Kiet North, the pegmatite dykes and veins dip around 65–70° to the southeast. The Main dyke intersected in drilling beneath the pit is up to 30 m wide, narrower dykes and veins also occur, particularly to the east.

The main objective of the proposed work is to report a Mineral Resource estimate (MRE) prepared in accordance with the JORC Code (2012)[1], for the RKLP located in southern Thailand. The MREs will be used for public reporting and a representative from CSA Global Pty Ltd (CSA Global) will be required to act as Competent Person. The MRE will report tonnage and grades for lithium oxide (Li_2O), tin (Sn), tantalum (Ta_2O_5) caesium (Cs), and rubidium (Rb).

Having considered the dimensions of the mineralised pegmatite veins and intercalated siltstones, it is CSA Global's view that by applying a linear estimator such as ordinary kriging (OK), excessive smoothing will be introduced. Mining operations are planned and designed based on block models. A fundamental parameter of this type of model is the choice of block dimensions or selective mining unit (SMU) size, which affects the operation and mining costs. In the early stages of mining operations, the available information is mainly drillholes samples, which may bring negative outcomes such as over-smoothed models, especially for complicated ore deposits. Therefore, a change of support is necessary to determine the distribution of grades at an equivalent volume to the SMU size. The non-linear localised uniform conditioning (LUC) method is appropriate for improved grade estimation of small blocks, when the input data spacing is coarse such as it is at Reung Kiet, where nominal spacing is 50 m x 50 m.

Generally, when the density of drillhole information is relatively low compared to the desired estimation block size, the estimation of these "small" blocks by the usual linear methods (e.g. by inverse distance weighting (IDW) or OK) would normally lead to a distortion, in the form of smoothing, and of the real variability of the block grades. A potentially serious consequence of the small block linear estimation

[1] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

approach is that the grade-tonnage curves are distorted, i.e. prediction of metal and ore tonnages and the average grade of the metal/mineral above a cut-off, based on these estimates, is quite different to that of true block grades exposed when grade control drilling and mapping augment the data.

At Reung Kiet, the situation of estimating "small" blocks is further complicated by the nature of mineralisation where mineralised pegmatite vein swarms, often of only a few metres across, are intercalated with low grade or barren siltstones. The samples that are unmineralised along the trace of the drillhole have to be included at zero grade because they indicate what proportion of the block is unmineralised.

With the application of Uniform Conditioning (UC), the panel (large estimation block) is discretised into SMUs. For example, if the panel is X = 30 m, Y = 40 m, Z = 5 m and the required SMU is 5 m x 10 m x 5 m, there would be 24 SMUs in a block and each SMU will represent a little more than 4% of the block tonnes. When a cut-off is applied to the SMUs, a portion of the block, say eight SMUs, will be below the cut-off and the other portion (16 SMUs) will be above the cut-off at higher grades than the block grade, giving a more realistic result given the style of mineralisation. The average panel grade would either be 100% below or 100% above the cut-off.

1.2 Sources of Information

CSA Global has completed the scope of work largely based on information provided by Pan Asia Metals Limited (PAM) and has supplemented this information where necessary with publicly available information.

CSA Global has made all reasonable endeavours to confirm the authenticity and completeness of the technical data on which this report is based, however, CSA Global cannot guarantee the authenticity or completeness of such third-party information.

The report author is not qualified to comment on any legal, environmental, political or other issues relating to the status of the tenements, or for any marketing and mining considerations related to the economic viability of the Project.

1.3 Prior Association and Independence

Neither CSA Global nor any of the authors of this report have any material present or contingent interest in the outcome of this report, nor do they have any pecuniary or other interest that could be reasonably regarded as affecting their independence. CSA Global's relationship with PAM is solely one of professional association between client and independent consultant.

1.4 Company and Author Summary

1.4.1 CSA Global

This report has been prepared by CSA Global, a privately-owned consulting company that has been operating from Perth, Western Australia for 30 years.

CSA Global provides multi-disciplinary services to clients in the global resources industry. CSA Global's services include project generation, exploration, resource estimation, project evaluation, development studies, mining operations assistance, and corporate consulting such as valuations and independent technical reports. CSA Global has worked for major clients globally and many junior resource companies. CSA Global personnel have been involved in the preparation of independent reports for listed companies in most international mining jurisdictions.

1.4.2 Authors

The principal authors of this report are Anthony Wesson and Millicent Canisius. David Hobby, Technical Director and Chief Geologist at PAM, contributed to other chapters of this report.

Peer review was completed by Aaron Meakin.

Anthony Wesson (Principal Resource Evaluation Consultant GDipEng (Mineral Economics), BComm, GDipEng (Mining), FAusIMM)

Anthony (Tony) is a mineral resource engineer with over 40 years' experience in operations, planning, consultancy and corporate roles for major mining companies. Anthony's strengths include mineral resource estimation and the application of advanced geostatistical methods, reconciliation, sampling theory and implementation, geometallurgy, due diligence, corporate governance and technology research and development. Anthony has global experience across a range of commodities and styles of mineralisation.

Millicent Canisius (Senior Consultant – Resource Geology MBA, BSc (Geology & Mathematics), Grad.Cert. (Geostatistics), MAIG, MAusIMM)

Millicent has more than 20 years' experience in mineral resource estimation, mining geology, geological data analysis, and exploration and resource development, both in operational roles and as a consultant. Millicent has continuously demonstrated excellence in leading successful mining and exploration resource projects across the globe. She has a proven history of planning, organising, and estimating Mineral Resources, in addition to the preparation of procedures and protocols to successfully achieve specific, pre-defined geo-scientific goals.

1.5 Competent Persons Statement

The information in this report that relates to Mineral Resources is based on information compiled by Ms Millicent Canisius and Mr Anthony Wesson, both full-time employees of CSA Global. Mr Anthony Wesson is a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy and Ms Millicent Canisius is a Member of the Australasian Institute of Mining and Metallurgy. Mr Anthony Wesson and Ms Millicent Canisius have sufficient experience, relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking, to qualify as Competent Persons as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Anthony Wesson and Ms Millicent Canisius consent to the disclosure of the information in this report in the form and context in which it appears. Ms Millicent Canisius assumes responsibility for matters related to Sections 1 and 2 of JORC Table 1, while Mr Anthony Wesson assumes responsibility for matters related to Section 3 of JORC Table 1.

2 Project and Exploration History

2.1 Location and Access

The RKLP is located approximately 60 km northeast of Phuket in the Phang Nga Province, southern Thailand (Figure 1). The Project is accessed via the Thepkrasatree and Petchkasem sealed roads from the town of Phuket. The town of Ban Kalai is about 2.2 km northeast of Reung Kiet, while the Chiang Mai and Pa Yang villages are located about 1 km in the west and south respectively. The Charoen Pokphand Foods breeding and commercial aquaculture farm is about 300 m west of the drilled area.

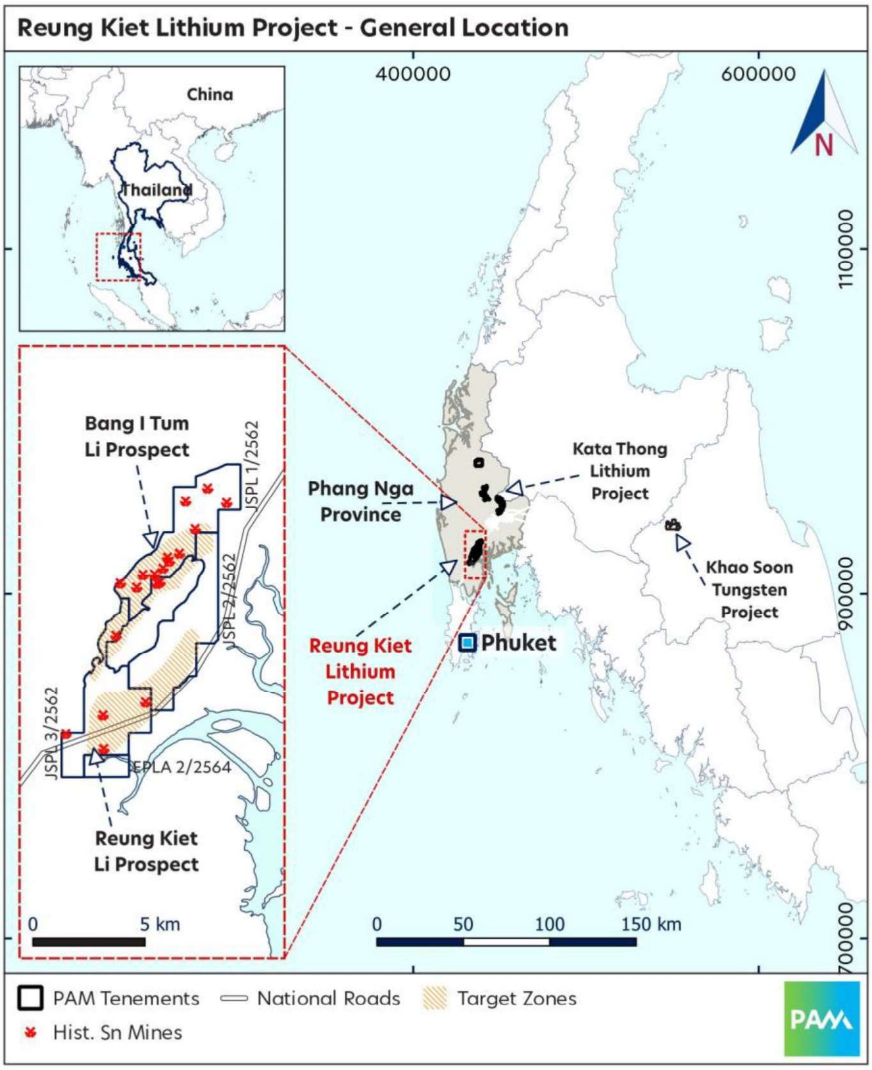


Figure 1: Location of the RKLP in Thailand
Source: PAM

2.2 Tenure

PAM holds a 100% interest in three contiguous Special Prospecting Licences (SPLs), collectively covering about 38 km^2. The three prospecting licences are SPL 1/2562, SPL 2/2562 and SPL 3/2562 which is the southern most of the three tenements (Figure 2).

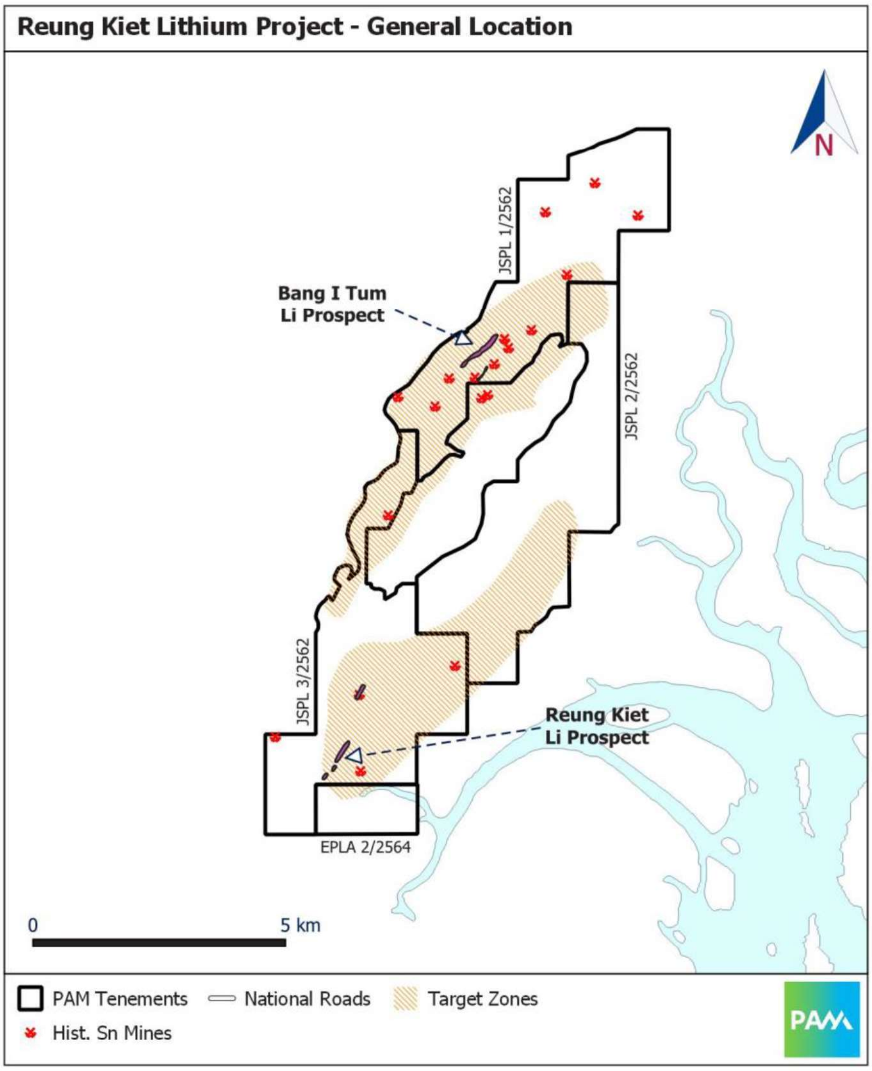


Figure 2: Location of the PAM SPLs
Source: PAM

The RKLP is located within SPL 2562. The Project is located approximately 60 km northeast of Phuket in the Takua Thung district of Phang Nga Province in southern Thailand. SPL 3/2562 was granted on 15 February 2019 and expires in February 2024. The SPL is registered under Siam Industrial Metal Company Limited, which is 100% owned by PAM.

2.3 Climate and Physiography

The climate of the area is tropical and characterised by hot seasons occurring between February and April and the average maximum daily temperature is above 33°C in Takua Thung district. The cool season is between June and December with an average daily maximum temperature below 31°C (Figure 3).

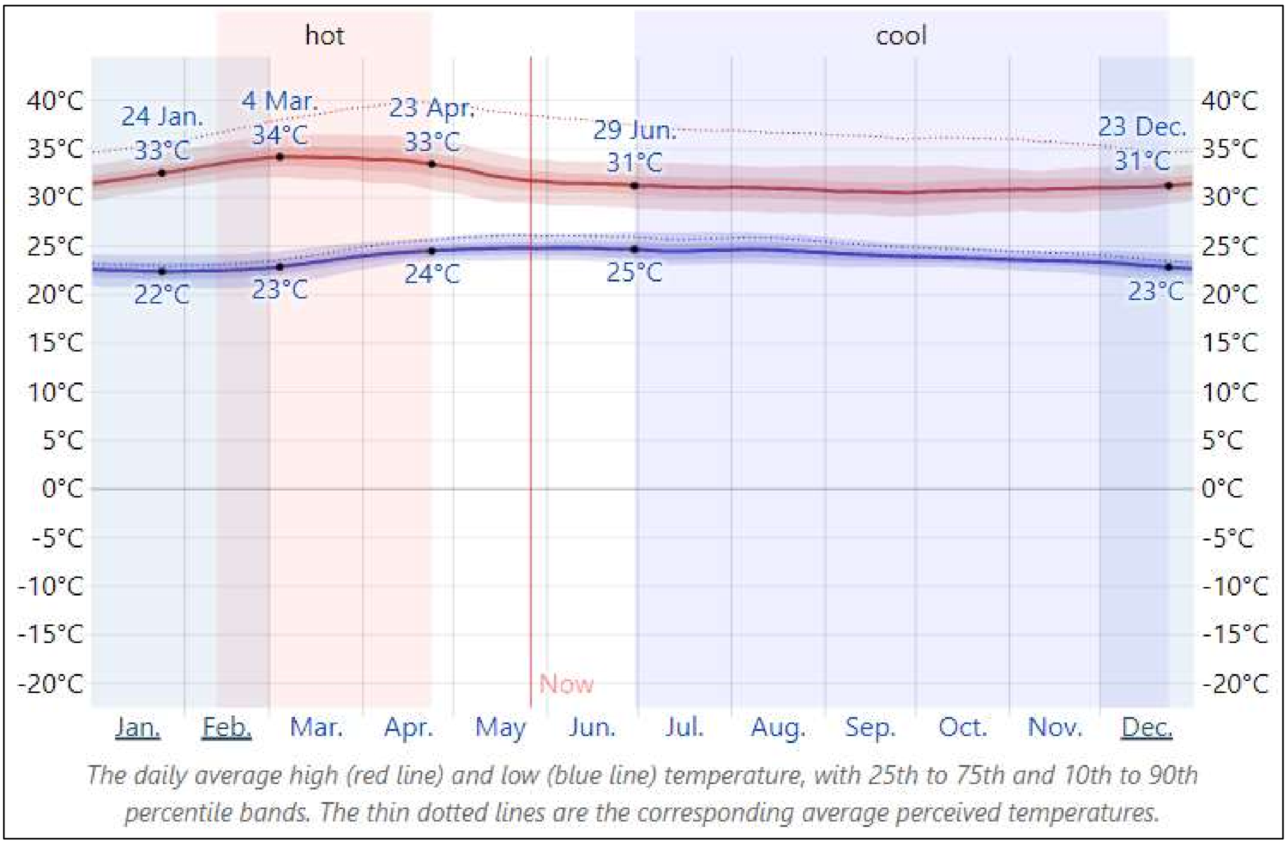


Figure 3: Monthly maximum and minimum temperatures for Takua Thung district in Phuket, Thailand
Source: https://weatherspark.com/y/112779/Average-Weather-in-Takua-Thung-Thailand-Year-Round

A significant amount of rain falls throughout the year averaging 2,126 mm per year. The least rainfall is received between December and March. The month with the least rain in Takua Thung district is February, with an average rainfall of 23 mm. Most precipitation falls in September, with an average of 348 mm. The average monthly rainfall is shown in Figure 4.

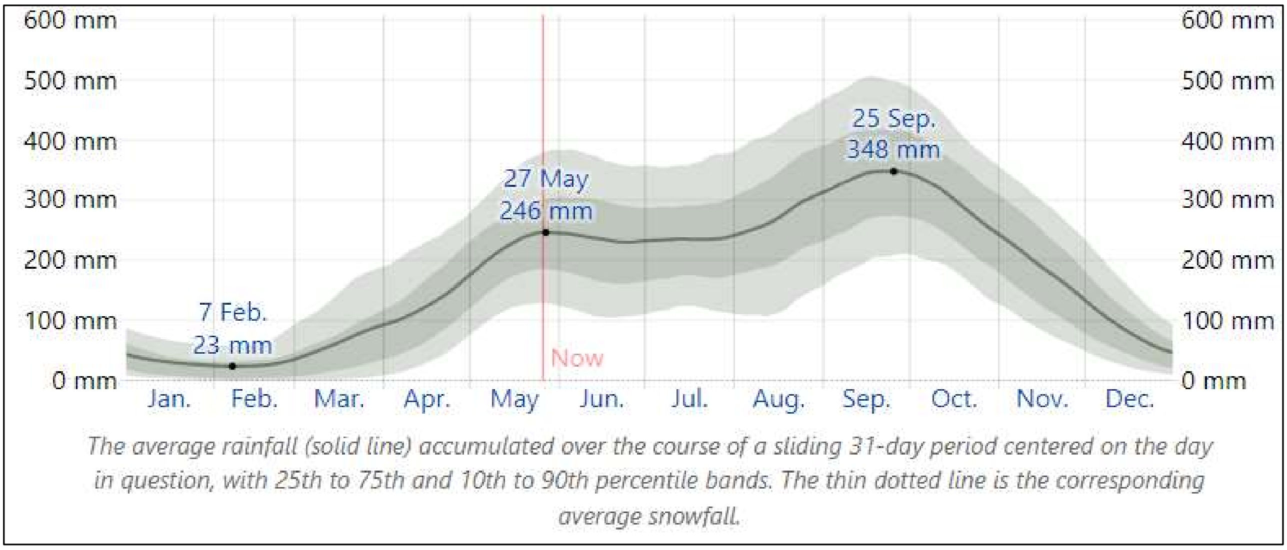


Figure 4: Average monthly rainfall data in Takua Thung district in Phuket, Thailand
Source: https://weatherspark.com/y/112779/Average-Weather-in-Takua-Thung-Thailand-Year-Round

The terrain is generally flat but encompasses a prominent knoll to the south of SPL 3/2562.

2.4 Infrastructure

The Project is accessed via the Thepkrasatree and Petchkasem sealed roads from Phuket. A high voltage powerline runs along the PAM tenure. The Rajjaprobha Hydro Power Station, housing three 80 MW generators totalling 240 MW of generating capacity, is located about 85 km north of the Project area (Figure 5).

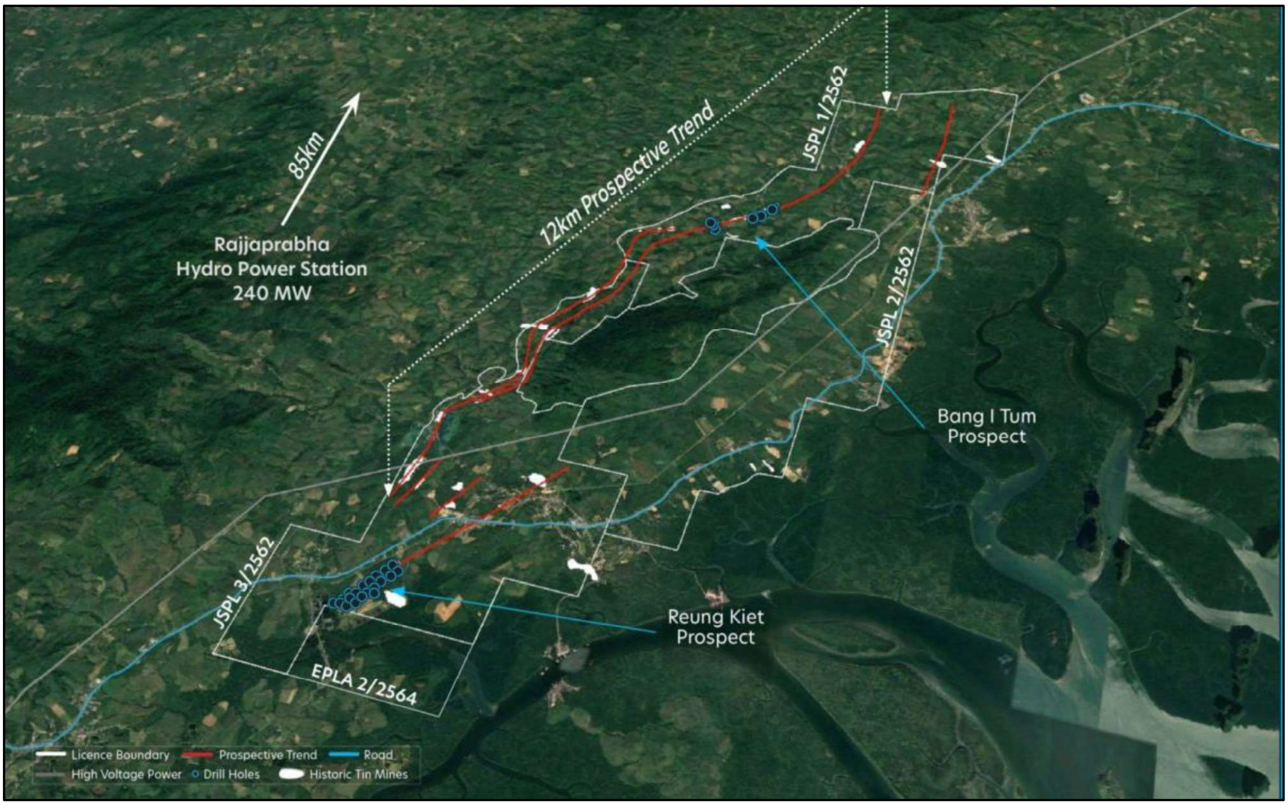


Figure 5: Infrastructure around the RKLP
Source: PAM

2.5 Project History

A joint Thai and Institute of Geological Sciences (a precursor of the British Geological Survey) study was conducted in the area in the 1960s (Garson et al., 1969). During this study, a lithium-bearing mineral lepidolite was identified in weathered pegmatites that were being mined for tin at the Reung Kiet open pit mine. The study included geological mapping, surface geochemical sampling, mineral descriptions of various mill concentrate, tailings and rock samples. The lepidolite was found to contain 3–4% Li_2O. At the Reung Kiet mine, part of the tailings dump was found to consist almost entirely of lepidolite. A beneficiation study on the Reung Kiet pegmatite was also completed. There is no further documentation of exploration activity carried out on the Reung Kiet Project area since the study completed in the 1960s.

A historical open pit mine extracting tin from the weathered pegmatites was conducted into the early 1970s. The pit is about 500 m long, 125 m wide and extends to 25 m below surface to the top of hard rock. Much of the pit is now filled with water. The Reung Kiet Project was part of a major tin mining region up until the mid-1980s but there is little detailed information regarding previous exploration and mining in the area. Approximately 300,000 tonnes of tin concentrates were produced from the Phang Nga Province between 1965 and 1990.

In 2011, Thai company Mae Fah Mining Co. Limited lodged prospecting licence applications over the area. In 2014, UK based ECR Minerals Plc entered into an option agreement to acquire the Project, but the option did not proceed, and the tenement application lapsed. During this period, 11 rock chips samples from unknown locations with analytical results of eight of the 11 samples were collected. Elevated Li_2O grades of up 1.9% with accessory tin and tantalum results were reported.

PAM was granted the three SPLs in 2019 and has undertaken, soil, rock chip, trench and stream sediment sampling in conjunction with geological mapping and follow-up diamond drilling. The work has identified lithium mineralisation on a strike of approximately 1 km which is still open on the northeast and southwest and at depth. PAM has completed metallurgical testwork on weathered pegmatite samples from trench and rock chip samples. The testwork indicated good lithium recoveries of 93.3% to a rougher concentrate grading 2.76% Li_2O.

3 Geological Setting and Mineralisation

This section has been compiled from the data gathered from PAM reports, an Independent Technical Assessment report compiled by Optiro Pty Ltd, and a report titled “The Lepidolite Pegmatites in the Phangnga Area of Peninsular Thailand” (Garson et al., 1969).

3.1 Regional Geology

The RKLP is situated in the Simbumasu block which hosts the Western Province of the South-East Asian Tin and Tungsten Belt. Cretaceous to Tertiary aged granites intrude older sedimentary rock of the Phuket Group comprising interbedded mudstone, siltstone, and sandstone.

The lepidolite pegmatites and most of the associated quartz feldspar pegmatites intrude parallel to the Phan Nga Fault Zone and were emplaced into sediments of the Phuket Group within approximately 3 km from the margins of the Khao Po and Khao Plai Bang To granites. The turbidites and pebbly mudstones constitute the sediments of the area and have been metamorphosed to lower greenschist facies up to 2 km from the granite margins. Neither the extent nor degree of alteration nor the composition of the wall rocks appear to have been significant factors in controlling the position of intrusion of the lepidolite pegmatites.

Lepidolite lithium mineralisation is associated with the pegmatite dykes and veins which intrude the Phuket Group sedimentary rocks along the northeast trending Phang Fault zone. The lepidolite-rich pegmatites are part of the LCT family of pegmatites. These pegmatites are composed of quartz, albite and lepidolite with minor cassiterite and tantalite and rare earths. Lepidolite is the only lithium-bearing mineral so far identified and occurs in weathered and fresh rock.

The granitic intrusions associated with the lepidolite pegmatites are medium to coarse-grained biotite granites with a porphyritic texture. Zircon, monazite, ilmenite and cassiterite occur as accessory minerals.

3.2 Deposit Geology and Mineralisation

The Reung Kiet pegmatite trend is divided is into two main parts – Reung Kiet North and Reung Kiet South. Reung Kiet North includes the old open cut and immediate surroundings. Reung Kiet South extends along strike to the southeast and encompasses a prominent knoll. The pegmatites at Reung Kiet strike at about 220° parallel to the Phang Nga Fault Zone.

The pegmatite dykes and veins at Reung Kiet North dip at a high angle ranging from 65° to 70° to the southeast. Drilling beneath the pit has intersected dykes up to 30 m wide. Narrower dykes and veins have also been intersected by the drilling.

In the southern part of the deposit, pegmatite dykes and vein swarms dip at angles between 60° and 30°. The pegmatite dykes and veins in the south are typically more numerous than those in the northern part of the deposit. The dykes and veins host the bulk of the lithium mineralisation; however, it is common for the adjacent and intercalated meta-siltstone to contain elevated lithium grades. The pegmatite swarm zone at Reung Kiet South is approximately 100 m wide and tapers slightly to the northeast as Reung Kiet North is approached.

Lepidolite is the only lithium-bearing mineral so far identified and occurs in weathered and fresh rock. In hand specimen, the lepidolite pegmatite is pale purplish pink in colour. The pegmatites are an assemblage of quartz, lithian muscovite and albite in varying proportions. Other common minerals are tourmaline, ilmenite, and occasionally secondary iron oxides.

4 Data Collection and Sampling Techniques

4.1 Drilling Techniques

Drilling on SPL 3/2562 was carried out between April 2019 and March 2022. Surface diamond drilling was used to collect samples on the tenement. Drilling was carried out by Drill Corp Thailand (a subsidiary of Drill Corp Asia) using NQ3 (45 mm) and HQ3 (61.1 mm) triple tube core diameter.

PAM drilled 54 holes for 8,574.5 m between 2019 and 2022, and 46 holes with received assays were used for the Mineral Resource estimation. The samples for the eight holes were dispatched to the laboratory but the assays are still pending. Most of the holes were drilled at an azimuth of 310° and inclined between 55° and 60°. Core orientation was conducted using the spear method. A summary of the drilling is presented in Table 3 and Figure 6.

Table 3: Reung Kiet drillhole summary by year

Area	Year	Drill type	No. of holes	Minimum depth (m)	Maximum depth (m)	Average depth (m)	Total depth (m)
Reung Kiet	2019	DD	5	69.5	183.0	117.5	587.5
	2021	DD	41	66.0	301.2	163.2	6,692.2
	2022	DD	8	56.8	245.0	161.9	1,294.8
	Total		**54**	**56.8**	**301.2**	**158.8**	**8,574.5**

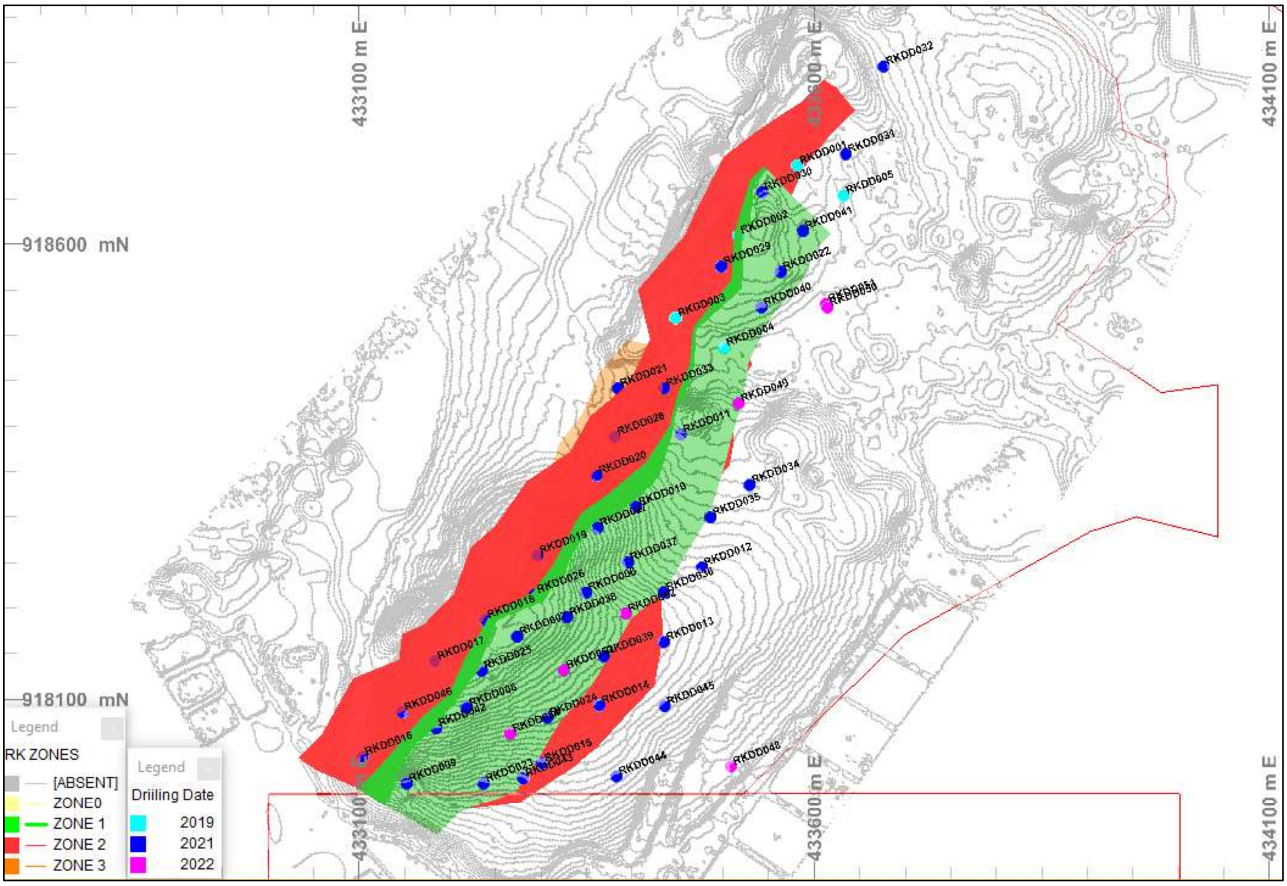


Figure 6: Plan showing holes drilled on RKLP and the interpreted mineralised zones

4.2 Logging and Mapping

Drillhole data logging was completed on paper copies and transferred to Microsoft Excel spreadsheets by the geologists. Logging was carried out at the core shed. All drillhole logging was detailed with lithology, geology descriptions, weathering, depth of core orientation marks, structure and core recovery recorded on logging sheets. Geotechnical logging was limited to contacts and major structures. Templates were available for the drill log cover sheet, specific gravity (SG), structure, sampling, geology, core recovery and core tray logs.

All core was photographed wet and then dry in clearly labelled core trays. All drill core was logged to a level of detail appropriate to establish the geological domains. Documentation on core logging and sampling procedures has not been made available to CSA Global. CSA Global recommends that PAM compiles the logging, quality control and sampling procedures to ensure consistent collection of geological data.

4.3 Sampling Techniques, Sample Preparation and Sample Recovery

Logged drill core samples were split into two longitudinal cuts using a core saw. Weathered material was split into half using a knife and shovel to obtain a representative half core sample. Sampling intervals ranged from 0.1 m to 2.4 m. A duplicate sample was collected at the laboratory by rotary splitting the nominated samples after fine crushing the whole half core sample. The core recovery from the 46 drillholes used for the MRE averaged 98%. Core recoveries that are less than 40% are associated with weathered zones. Sample preparation was completed at ALS Vientiane in Laos as follows:

- Samples were received and sorted
- Half core was fine crushed to 70% less than 2 mm using a Boyd crusher
- All crushed samples were riffle split using the rotary splitter to collect about 1 kg of the sample
- A crushed duplicate sample was collected from nominated samples if required
- About 1 kg of the samples was pulverised to 80% passing 75 microns (µm)
- The pulp was air frighted to ALS Vancouver, BC, Canada for analysis.

4.4 Analytical Methods

All samples were analyses at ALS Vancouver, BC, Canada. Pulp samples for RKDD001 to RKDD015 were analysed for lithium only using the using the ore grade LI-OG63 four-acid digestion method and inductively coupled plasma atomic emission spectroscopy (ICP-AES) finish.

4.4.1 RKDD001 to RKDD0015

A sum of 617 (17%) of pulp samples from holes RKDD001 to RKDD015 were analysed for lithium only using the ore grade lithium method by specialised four-acid digestion method on 0.4 g of the sample. The analytical method utilises ICP-AES. The ALS code for the analytical method is Li-OG63. The ME-OG62o method was triggered as an over-range method for the Li-OG3 analytical method.

Caesium, rubidium, tin and tantalum results were analysed using a handheld x-ray fluorescence (XRF) machine on ALS pulps by PAM. XRF analysis was performed using a PAM owned Olympus Vanta M Series Model VMW-CCC-G3-U handheld analyser with reading time totalling 50 seconds. The XRF results were then modified based upon the simple linear regression formulas derived from the validation of the known laboratory assayed values for caesium, rubidium, tin and tantalum by PAM. Details of the adjustments are in Section 5.2.4 of this report.

4.4.2 RKDD0016 to RKDD0046

A sodium peroxide fusion lithium assaying method was completed on 0.2 g of the pulp from drillholes RKDD016 to RKDD0046 using the sodium peroxide fusion decomposition method. The analytical method utilises inductively coupled plasma mass spectrometry (ICP-MS). The ALS code for the analytical method is ME-MS89L. The method is suitable for exploration in pegmatites and accessory commodities. However, 414 samples from RKDD006 to RKDD011 and RKDD0014 to RKDD0015 were selected and analysed using the ME-MS89L method at a later stage. A total of 2,951 (83%) samples were analysed using the ME-MS89L analytical method. Fifty two elements were determined by ME-MS89L and include Ag, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Re, Sb, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, and Zn.

4.5 Verification of Sampling and Assaying

The Senior and Chief Geologists of PAM have verified the significant intersections. A CSA Global representative has confirmed some sampling intervals from selected drillholes which were inspected during the site visit. At this stage, check samples have not been sent to an independent laboratory for independent analysis.

CSA Global has randomly checked the database assays against the laboratory assay certificates. A total of 562 values assayed using the Li-OG63 method were incorrectly recorded under the Li ppm field, and these have been corrected. CSA Global recommends that selected pulps which include high-grade and low-grade lithium values are sent to an independent laboratory to check the primary laboratory. A PAM representative is also encouraged to visits the laboratory to validate the sample preparation procedures at ALS.

4.6 Location Of Data Points

The UTM WGS84 Zone 47N coordinate system was used for the Project and 50 hole collars were located using a differential global position system (GPS) by Austhai Geophysical consultants (Thailand) Co. Ltd (Austhai). The differential GPS method has an accuracy of approximately 10 cm. All holes were inclined at angles between 55° and 65°. Four holes (RKDD051 to RKDD0054) were located using a handheld GPS. Downhole surveys for RKDD006 to RKDD0054 (91%) were completed using a Reflex camera. Five holes (9%) comprising RKDD001 to RKDD005 completed in the early stages of the drilling did not have downhole surveys.

A photogrammetry survey for the area was conducted by Austhai in October 2021. The survey generated the digital terrain model (DTM) and contour lines at 0.25 m, 0.5 m, and 1 m intervals using four 3D control points for maximum accuracy. In February 2022, Austhai conducted a differential GPS survey along the shoreline of the old waterbodies to estimate the most accurate elevation of the open pits and determine the volume of the waterbodies. The volume of historical waterbodies and their approximate depths were incorporated in the photogrammetric survey of the area. The photogrammetric coverage survey gives good control in respect of elevation and location of the data.

4.7 Data Spacing and Distribution

Drill spacing varies from approximately 50 m x 50 m to 100 m x 100 m along and across strike of the deposit. The dominant drill spacing at the Reung Kiet deposit is 50 m along strike x 50 m across strike.

4.8 Orientation in Relation to Geological Structure

The mineralisation strikes northeast-southwest and has a moderate to steep dip to the northwest. The historical tin open pit extracted part of the mineralisation although they concentrated on the weathered material. The mineralisation is generally intersected close to perpendicular to the drill orientation.

4.9 Sample and Data Security

Samples were couriered via Safeway Logistics to Laos via the Nong Khai-Laos boarder check point in Nong Khai Province of Thailand. The laboratory confirms the receipt of sample upon delivery. Pulp samples for analysis were air-frighted to Vancouver in accordance with laboratory protocols.

4.10 Drillhole Database

No audits or reviews have been carried out to date. CSA Global recommends that PAM compiles sampling, quality control and logging procedures and that data be loaded into a database for ease of management. Currently all data is stored in Microsoft Excel spreadsheets and backed up on external drives.

4.11 Site Inspection

Ms Millicent Canisius from CSA Global completed a site visit to RKLP from 9 May to 11 May 2022 to review the site geology, data collection procedures and provide support to the site team.

During the visit, the following actions were completed:

- Drillhole collars were located in the field
- Diamond drill core for Reung Kiet was inspected
- Data collection and core logging procedures were discussed
- Sampling procedures were discussed and observed
- Controls of mineralisation were discussed.

Data is collected in a manner that supports reporting a MRE in accordance with the guidelines of the JORC Code, and controls on the mineralisation are relatively well-understood.

5 Quality Assurance and Quality Controls

5.1 Quality Assurance Protocols

Blanks, duplicates and internal reference materials were included in the drilling sample stream. A duplicate sample was collected at the laboratory by rotary splitting the samples of the nominated samples after fine crushing. Documentation specifying current quality assurance requirements were not made available to CSA Global. A summary of the quality assurance protocols are as follows:

- Inclusion of coarse field blanks at a rate of one every 20 samples submitted. The coarse blank is composed of -20 mm crushed limestone purchased from local hardware shops. There have been three different coarse blanks used over the course of the Project.
- Inclusion of internal reference material at a rate of close to one in every 20 samples of core samples submitted. The internal standards were generated from ALS pulp rejects generated during the trenching program. Each standard sample was about 20 g in weight and extracted from the pulp reject using a spoon. Fourteen trench pulp rejects have been used to make the PAM internal standards, but 11 standards have been used for the Project quality assurance and quality control (QAQC). PAM has not conducted external verification of the lithium, tin, tantalum, rubidium or caesium values of the internal standards but has relied on calculating the average grades for these elements from the assays returned from ALS. The samples have been analysed over successive laboratory batches during the 11-month drilling program.
- Duplicate samples are inserted at about 1 in 10 samples. The duplicate samples are collected at the laboratory by rotary splitting the nominated samples after fine crushing the whole half core sample to 70% passing 2 mm. The two samples are subsequently analysed as primary and duplicate sample.

5.2 Quality Control Results

A QAQC report was compiled by PAM and the available quality control data has been reviewed by CSA Global, but not reproduced in this report.

5.2.1 Blanks

PAM submitted a total of 210 coarse blank samples to the laboratory. PAM noted three populations of the course blank and, these are termed CB1 with lithium results which are at or near the lower limit of detection, CB2 with lithium results ranging from 5 ppm to 25 ppm, and CB3 with lithium results generally between 25 ppm and 50 ppm.

The detection limit for lithium using the ME-MS89L analytical method is 2 ppm, if a limit of 10 times the detection limit is used for the coarse blanks, assay results greater than 20 ppm would fall outside the acceptable limit and constitute a failure. The expected results of the coarse blank samples are unknown as they were not assayed before being used by PAM.

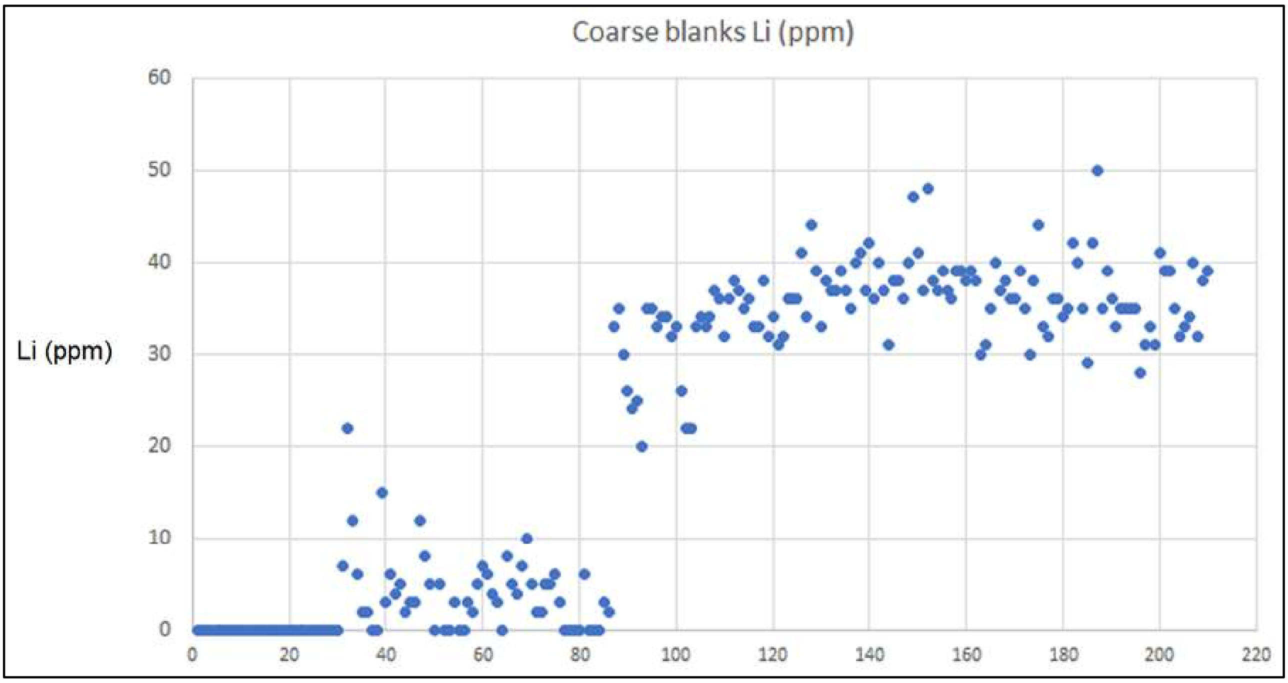


Figure 7: Control plot of blank samples (right) plot for Li ppm of the RKLP
Source: 20220607_QA_QC RKLP assays for MRE_ Pan Asia Metals

5.2.2 Internal Standards or Standard Reference Materials (SRMs)

PAM used 11 types of internal standard reference material that were made from trench pulp rejects that were inserted as every 20th sample. A total of 197 internal standards were analysed between 2019 and 2022. Internal standards were not inserted for holes RKDD001 to RKDD005 during the early stages of drilling. For holes RKDD006 to RKDD015, only lithium analysis was reported for internal standards, as caesium, tin, rubidium and tantalum were reported using the XRF method. Internal standards inserted in drillholes RKDD06 to RKDD046 were analysed for lithium, caesium, tin, rubidium, and tantalum.

The number of times the internal standards have been analysed for lithium, tin, tantalum, rubidium and caesium is shown in Table 4. PAM completed the analysis of lithium, tin, tantalum, rubidium and caesium results internal standards and the mean, the minimum and maximum values are presented in Table 5 to Table 9. The columns “% Minimum of mean” and “% Maximum of mean” represent the departure of the minimum and maximum assay values from the mean. Lithium analysis shows that departure from the mean value for all standards is typically ±5% while the other elements show variances. For caesium, rubidium, tin, and tantalum, the departure values from the mean are greater than ±10%. It is unclear whether the departures from the mean are related to the inhomogeneity of the standards or the assaying imprecision.

Table 4: Reung Kiet internal standards summary data

Standard Sample ID	No. Li analysis	Mean Li (ppm)	Mean Sn (ppm)	Mean Ta (ppm)	Mean Rb (ppm)	Mean Cs (ppm)	Holes in which STD used	No. Sn, Ta, Rb, Cs analysis
TR10008	24	6447	545	191	4825	616	6-35	22
TR10012	23	5828	469	139	4081	361	7-40	22
TR10026	23	7059	656	177	5271	600	9-41	22
TR10031	19	2388	394	45	1647	159	6-27	12
TR10035	13	6488	618	192	5627	1026	39-46	13
TR10039	28	2705	284	178	2452	252	6-34	20
TR10044	22	4775	699	176	4124	471	10-38	20
TR10051	11	9007	559	167	7136	606	6-27	8
TR10053	15	1877	208	53	1453	155	22-27	12
TR10067	10	6047	548	190	5175	635	39-43	10
TR10071	9	6141	405	158	4221	651	41-44	9

Table 5: Reung Kiet internal standards, Li summary data

Standard sample ID	No. Li assays	Mean Li (ppm)	Minimum Li (ppm)	Maximum Li (ppm)	% Minimum of mean	% Maximum of mean
TR10008	24	6447	6150	6780	95%	105%
TR10012	23	5828	5670	6050	97%	104%
TR10026	23	7059	6730	7280	95%	103%
TR10031	19	2388	2290	2520	96%	106%
TR10035	13	6488	6290	6620	97%	102%
TR10039	28	2705	2600	2810	96%	104%
TR10044	22	4775	4660	4900	98%	103%
TR10051	11	9007	8600	9450	95%	105%
TR10053	15	1877	1660	1950	88%	104%
TR10067	10	6047	5800	6240	96%	103%
TR10071	9	6141	5880	6300	96%	103%

Table 6: Reung Kiet internal standards, Sn summary data

Standard sample ID	No. Sn assays	Mean Sn (ppm)	Minimum Sn (ppm)	Maximum Sn (ppm)	% Minimum of mean	% Maximum of mean
TR10008	22	545	472	660	87%	121%
TR10012	22	469	401	542	86%	116%
TR10026	22	656	602	720	92%	110%
TR10031	12	394	324	472	82%	120%
TR10035	13	618	557	692	90%	112%
TR10039	20	284	257	342	90%	120%
TR10044	20	699	600	894	86%	128%
TR10051	8	559	513	608	92%	109%
TR10053	12	208	182	242	88%	116%
TR10067	10	548	508	597	93%	109%
TR10071	9	405	364	432	90%	107%

Table 7: Reung Kiet internal standards, Ta summary data

Standard sample ID	No. Ta assays	Mean Ta (ppm)	Minimum Ta (ppm)	Maximum Ta (ppm)	% Minimum of mean	% Maximum of mean
TR10008	22	191	162	223	85%	117%
TR10012	22	139	117	169	84%	122%
TR10026	22	177	158	195	89%	110%
TR10031	12	45	38	52	84%	116%
TR10035	13	192	177	219	92%	114%
TR10039	20	178	148	210	83%	118%
TR10044	20	176	150	205	85%	116%
TR10051	8	167	148	185	89%	111%
TR10053	12	53	46	63	87%	119%
TR10067	10	190	173	213	91%	112%
TR10071	9	158	141	170	89%	108%

Table 8: Reung Kiet internal standards, Rb summary data

Standard sample ID	No. Rb assays	Mean Rb (ppm)	Minimum Rb (ppm)	Maximum Rb (ppm)	% Minimum of mean	% Maximum of mean
TR10008	22	4825	4190	5400	87%	112%
TR10012	22	4081	3880	4380	95%	107%
TR10026	22	5271	4910	5650	93%	107%
TR10031	12	1647	1400	1805	85%	110%
TR10035	13	5627	5180	5930	92%	105%
TR10039	20	2452	2220	2770	91%	113%
TR10044	20	4124	3790	4550	92%	110%
TR10051	8	7136	6360	8460	89%	119%
TR10053	12	1453	1240	1590	85%	109%
TR10067	10	5175	4870	5480	94%	106%
TR10071	9	4221	3880	4660	92%	110%

Table 9: Reung Kiet internal standards, Cs summary data

Standard sample ID	No. Cs assays	Mean Cs (ppm)	Minimum Cs (ppm)	Maximum Cs (ppm)	% Minimum of mean	% Maximum of mean
TR10008	22	616	514	690	83%	112%
TR10012	22	361	332	389	92%	108%
TR10026	22	600	555	669	93%	112%
TR10031	12	159	129	181	81%	114%
TR10035	13	1026	899	1075	88%	105%
TR10039	20	252	226	278	90%	110%
TR10044	20	471	430	517	91%	110%
TR10051	8	606	562	653	93%	108%
TR10053	12	155	133	167	86%	108%
TR10067	10	635	585	691	92%	109%
TR10071	9	651	592	701	91%	108%

5.2.3 Coarse Duplicates

Coarse duplicate samples were inserted at about 1 in every 10 samples resulting in a total of 343 duplicate pairs. The coarse duplicate sample were split at the laboratory after fine crushing the half core of a nominated sample. The lithium results of the 343 duplicate pairs are shown in Figure 8.

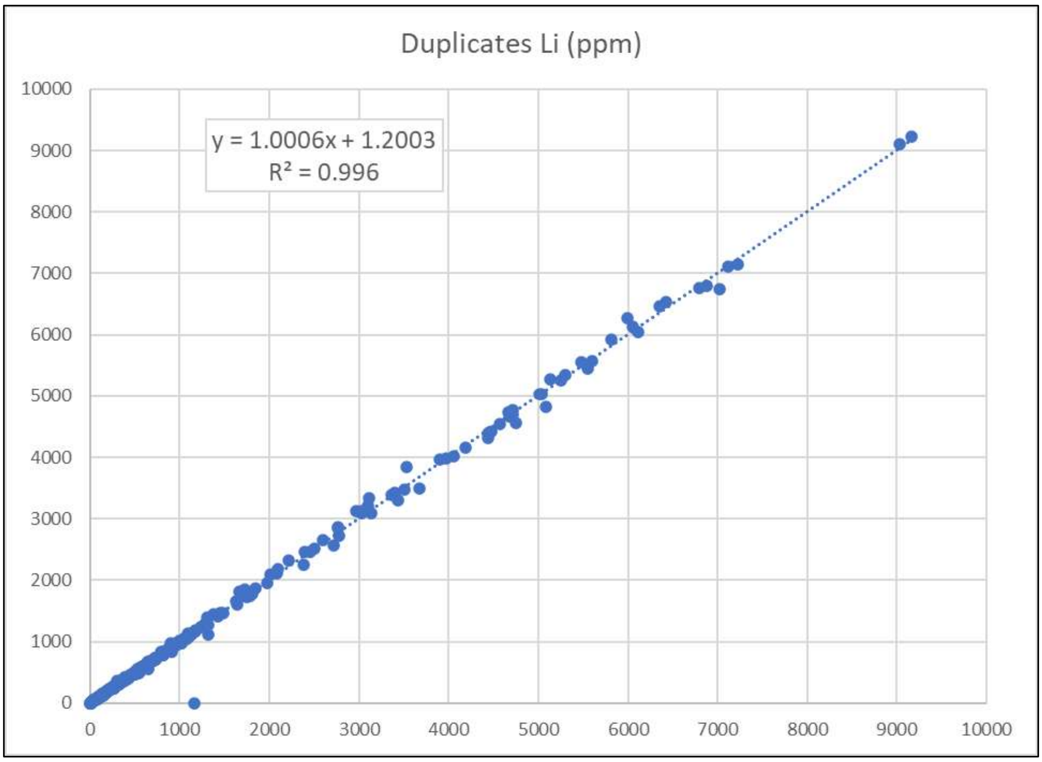


Figure 8: Reung Kiet Li Field Duplicate Analysis
Source: 20220607_QA_QC RKLP assays for MRE_ Pan Asia Metals

5.2.4 XRF Results Check and Adjustment By PAM

The results for tin, tantalum, caesium, rubidium from holes RKDD001 to RKDD015 were obtained using a PAM owned Olympus Vanta M Series Model VMW-CCC-G3-U handheld XRF analyser with reading time totalling 50 seconds. The pulp samples for 1,264 samples from holes RKDD016 to RDDK030 with known results for tin, tantalum, rubidium, caesium and other elements determined by the ALS Method ME-MS89L were analysed using the XRF analyser. The samples that returned assay values less than the detection limit from either ALS methods or the XRF analysis have not been used in the data.

The raw XRF readings were plotted against the ALS assays; presented as scatterplots (Figure 9) and assessed by PAM. PAM then concluded that XRF and ALS results demonstrate good to excellent correlation and that the undercall or overcall of XRF vs ALS results is quite predictable with R^2 values around 0.9 or better for tin, rubidium, and caesium. Data for tantalum may indicate two populations. CSA Global is of the opinion that, given the wide scatter around the bisector line and visual evidence that as the grades increase so does the scatter, the R^2 parameter results in misleading conclusions about precision of measurements. It is more important to set acceptance-rejection limits, for example that the requirements be that less than 10% of samples can exceed the Mean Paired Relative Difference (MPRD) of ±10%.

Raw XRF assays for tin, tantalum, rubidium and caesium from holes RKDD001 to RKDD015 were then adjusted based upon the simple linear regression formulas derived from the plots (Figure 9). The respective formulae used to adjust the raw values obtained from the XRF analyser are shown in Table 10.

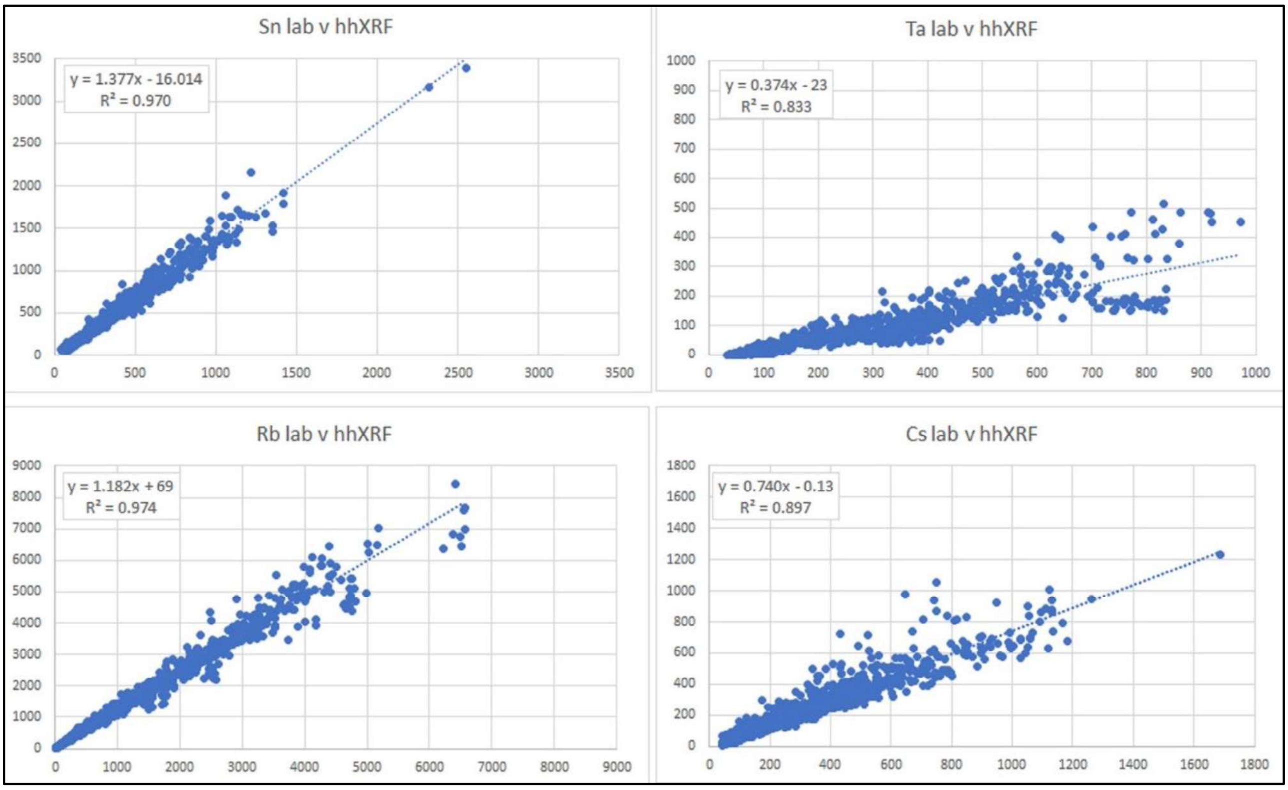


Figure 9: Reung Kiet scatter plots ALS assays (Y axis) vs XRF assays (X axis) – Sn, Ta, Rb, Cs
Source: 20220607_QA_QC RKLP assays for MRE_ Pan Asia Metals

Table 10: Reung Kiet data summary – a ALS assays vs XRF and regression formula

Samples > LLD	R^2	Equation from data	Equation in assay data hhXRF
1,061	0.97	Sn = 1.38 x XRF - 16	1.30
1,227	0.83	Ta = 0.37 x XRF - 23	0.37
1,206	0.97	Rb = 1.18 x XRF + 69	1.18
1,162	0.90	Cs = 0.74 x XRF - 0.13	0.70

Source: 20220607_QA_QC RKLP assays for MRE_ Pan Asia Metals

5.3 Competent Persons' Opinion on Data Quality

A reasonably high level of confidence can be placed in the location of data points which are accurate and reliable. Sample collection, sample preparation and logging are largely consistent with accepted industry practices and suitable for use in the preparation of an MRE.

The analytical methods LI-OG63 and ME-MS89L completed by ALS, are considered industry standard techniques for lithium analysis; 617 (17%) of the samples analysed for tin, tantalum, rubidium and caesium used the XRF technique. The raw XRF results were adjusted based upon the simple linear regression formulas derived from the data review of XRF assays vs ALS assays completed by PAM. It is recommended that PAM re-assay the pulps that have been analysed by XRF method using industry standard methods. The handheld XRF machine should be calibrated using commercially certified reference material.

While PAM used internal refence material for quality control of the data, the reference material did not have certified expected results for lithium, tin, tantalum, rubidium, and caesium. The accuracy and performance of the laboratory could therefore not be checked using the internal reference material. PAM is strongly encouraged to purchase commercial certified reference materials (CRMs) for future drilling programs. The CRM results should be reviewed while the data is being collected so that corrective action can be taken if the laboratory is not performing well. PAM is also encouraged to select some pulps and send them to a different laboratory for check assays as a way of verifying the primary laboratory performance and enhancing the confidence in the assay data.

CSA Global recommends that, to increase the confidence in the SRMs, used to date, so that this does not become an impediment to upgrading the mineral resource at the next phase of the project, and to ensure that future SRMs can be used confidently, the following should be planned for:

Submit the current SRMs along with several CRMs, for round-robin analyses to several laboratories, this will provide a measure of accuracy (bias) and precision for the SRMs.

Decide which elements and what grade ranges are required for SRMs/CRMs; the current range of the internal standards does not cover the required grade range for Li.

Are they required for oxides, transition and fresh materials and how many for each?

SRMs and CRMs should constitute 5% of all dispatched samples.

What samples are available for collection in the required grade ranges?

Are there coarse rejects or pulps available which will make ideal candidates for preparation of SRMs/CRM's because they are of known grade and should be of similar nominal size.

Are cored sample rejects available as they make the best material for SRMs/CRM's

What analytical method or methods will be employed to determine the concentration of analytes in future programs? This is an important consideration for instructing laboratories that will be involved in the round-robin process. All laboratories involved in certification should use the same preferred analytical method, hence the laboratories should be provided with the required procedure as part of the scope for certification quotation request.

Coarse blanks were used to check for contamination during sample preparation. A total of 210 blank samples were inserted during the drilling programs. However, these blank samples were not assayed for lithium, tin, tantalum, rubidium and caesium prior to their use in the drilling program and assumed to have undetectable values of lithium, tin, tantalum, rubidium, and caesium. While CB3 showed elevated values of lithium (25 ppm to 50 ppm), the elevated values could be inherent in the material itself and not associated with contamination. PAM is encouraged to send samples of the blank material for assay check with different laboratories before use to ensure that the material being used has undetectable values of the required elements. The other option would be to purchase commercially certified blank samples.

The crushed duplicate plot for lithium shows a good correlation between the primary and the duplicate sample. The scatter plot shows good reproducibility of the data and there is no evidence of bias in the lithium assay results. It is recommended that PAM compiles appropriate statistical graphs and table such as MPRD % and scatter plots for tin, tantalum, rubidium and caesium as well to complete package.

PAM's data collection is guided by QAQC protocols. CSA Global recommends that PAM compiles written procedures of the data capturing, logging, sampling, and quality assurance process. These can be used to ensure that data collection is consistent among all drill programs.

6 Data Import and Validation

6.1 Software

Data import, validation and geological modelling was carried out using Datamine Studio RM software (version 1.10.100.0).

6.2 Data Files Provided

PAM provided drillhole data in Microsoft Excel format including collar, surveys, assay, weathering, geology and SG data. The other data files provided included topographic survey data, tenement shape files, assay certificates, drillhole core photographs, survey reports and previous geological reports. The following tables were imported into Datamine:

- Collars
- Surveys
- Assays
- Weathering
- Geology
- SG
- Trench assays and coordinates
- Rock chip assays and coordinates.

6.3 Data Validation

CSA Global checked the drillhole data for the following errors prior to Mineral Resource estimation:

- Absent collar data
- Questionable downhole survey records
- Absent survey data
- Overlapping assay intervals
- Overlapping geology intervals.

Some issues were detected, and the following corrections were made:

- Values below detection limit (<0.02) for silver on RKDD023 from 148.6 m to 149.3 m and RKDD0043 from 129.4 m to 129.65 m were converted to half the detection limit.
- The survey dip for RKDD0034 at 292 m recorded as positive was corrected to negative.
- The survey file did not contain the collar survey, and these were inserted by CSA Global using the collar file. A total of 54 collar records were inserted.
- 53 overlapping intervals in the assay file were corrected in conjunction with PAM.
- Core recovery for six intervals between 187.5 m and 193.5m on RKDD012 were recalculated.
- Core recovery values with a mixture of percentage format and general number format were changed to general number format.
- 17 geology intervals from RKDD004, RKDD006, RKDD007, RKDD008, RKDD009, RKDD010, RKDD015, RKDD019 and RKDD030 were corrected for overlapping or duplication.
- Some pegmatite dyke and veins intervals were logged and included in the geology description but excluded in the main lithology intervals resulting in gaps in the lithology files. CSA Global pulled out the pegmatite dykes and veins where possible and included them in the geology file. A total of 366 intervals were inserted.

- A total of 562 Li % (16%) assay records from drillholes RKDD004 to RKDD015 were erroneously recorded under the Li ppm field. The records were converted to Li ppm.
- The Li ppm record from RKDD006 at Sample ID DR60483 recorded as 2680 was changed to 1680 ppm as reflected in the assay certificate.

6.4 Drillhole Data Selection

Drillhole data for the RKLP was assessed to determine suitability for the MRE. A total of 54 drillholes were imported into Datamine, and all holes contained geology data and were used to generate the geology wireframes. Only 46 of the holes containing assays were used for the final estimation process. The trench and rock chip data were used for the geological interpretation, but they were not included in the estimation process.

7 Geological Modelling

7.1 Software

The geological modelling for Reung Kiet was completed using Datamine Studio RM software (version 1.10.100.0).

7.2 Preliminary Statistics

All drillhole data was imported into Supervisor software and assessed to see if a lithium cut-off grade could be used to define the mineralisation boundaries of the Reung Kiet deposit. The log probability plot and the log histogram of the lithium and Li_2O data did not show a natural cut-off for the deposit that could be used for domaining (Figure 10 and Figure 11). From the Li ppm plot, the values of 200 ppm and 1400 ppm on the inflexion point seemed too high or too low to be used for domaining.

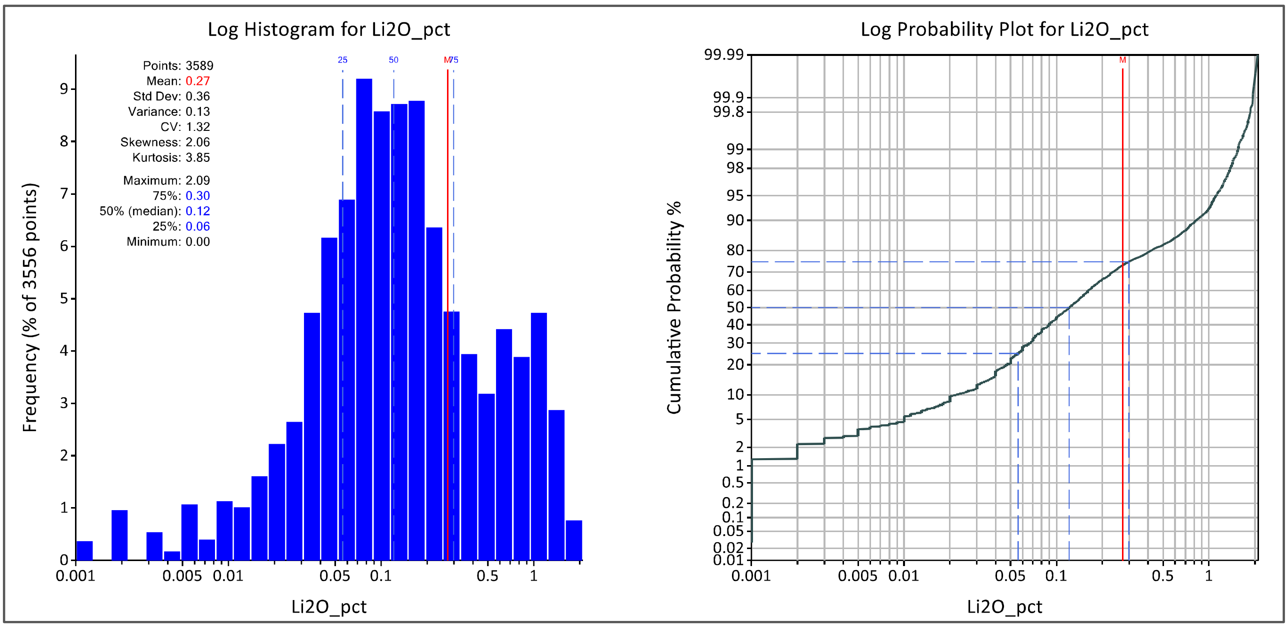


Figure 10: Log histogram (left) and log probability (right) plot for Li_2O % of the RKLP

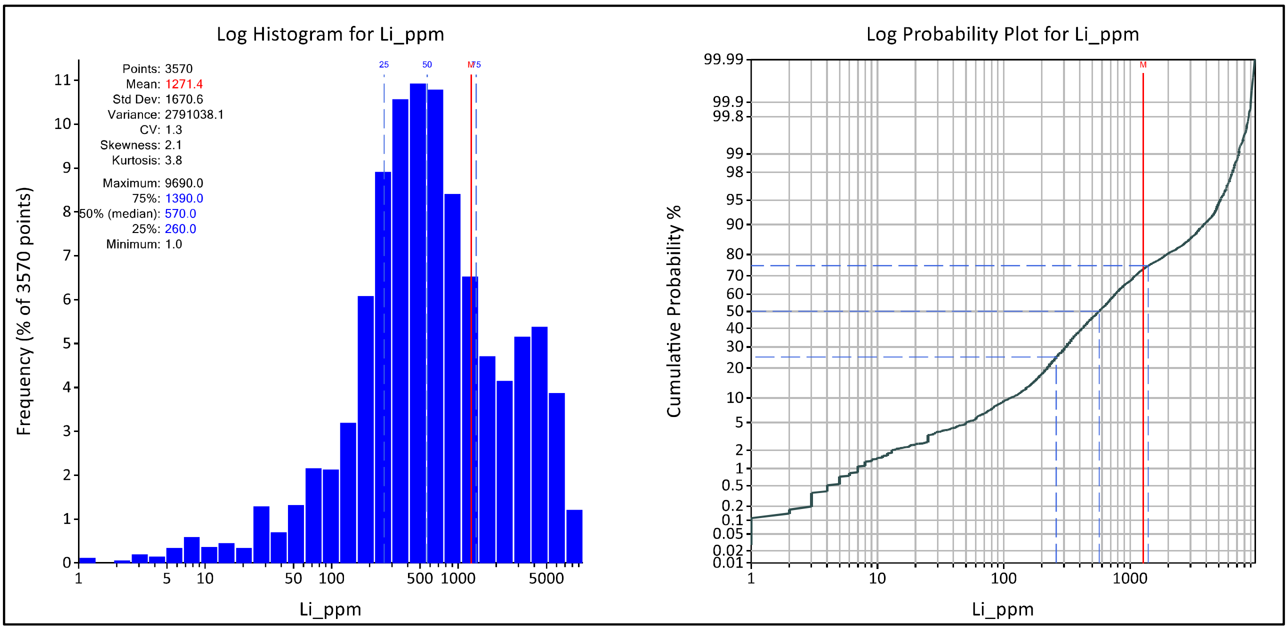


Figure 11: Log histogram (left) and log probability (right) plot for Li ppm of the RKLP

7.3 Mineralisation Domains

Lithium mineralisation is largely hosted in lepidolite-rich pegmatite dykes and veins. Siltstones adjacent to the pegmatites generally contain lithium mineralisation. Sectional interpretations were completed based on a combination of Li_2O grades greater than 0.1% and lithology. Three broad mineralisation envelopes were generated, and the envelope may include samples with grades that are less than 0.1% Li_2O as internal dilution. The mineralised envelopes are separated by very low grade (generally <0.1% Li_2O) siltstone zones which are largely unsampled. The sampling of the Project is not very consistent and some siltstone intervals within the mineralised envelopes were not sampled.

Each cross section was displayed in Datamine together with drillhole traces colour coded with Li_2O assays and lithology and three set of strings were generated. All interpreted strings were snapped to drillhole intervals. In cases where the mineralised envelope did not extend to the adjacent drillhole section, the string was extended to half the distance between sections and terminated. If there was no drilling down-dip; the string was extended to approximately half the drill spacing on section.

The digitised strings were used to generate 3D solid wireframes for the mineralised envelopes (Figure 12 and Figure 13). Three mineralised domains were defined; Zone 1 is the mineralised unit comprising the pegmatite dykes and siltstone zones located close to the surface. Zone 1 is generally narrow and averages about 8 m.

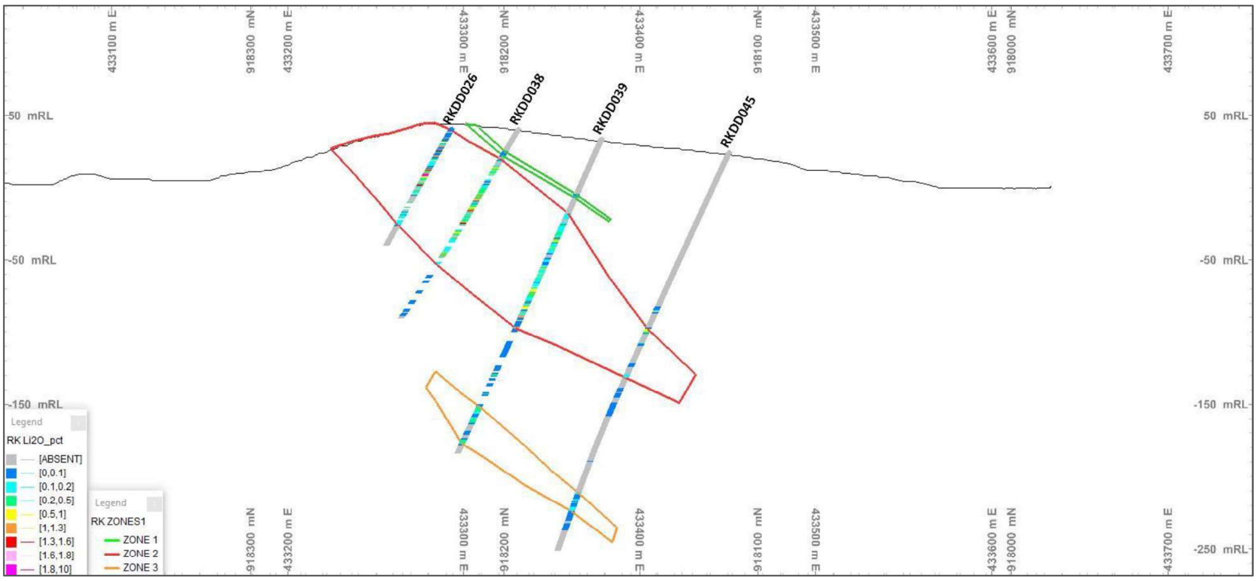


Figure 12: Reung Kiet typical section showing drillholes with Li_2O grades and mineralisation domains

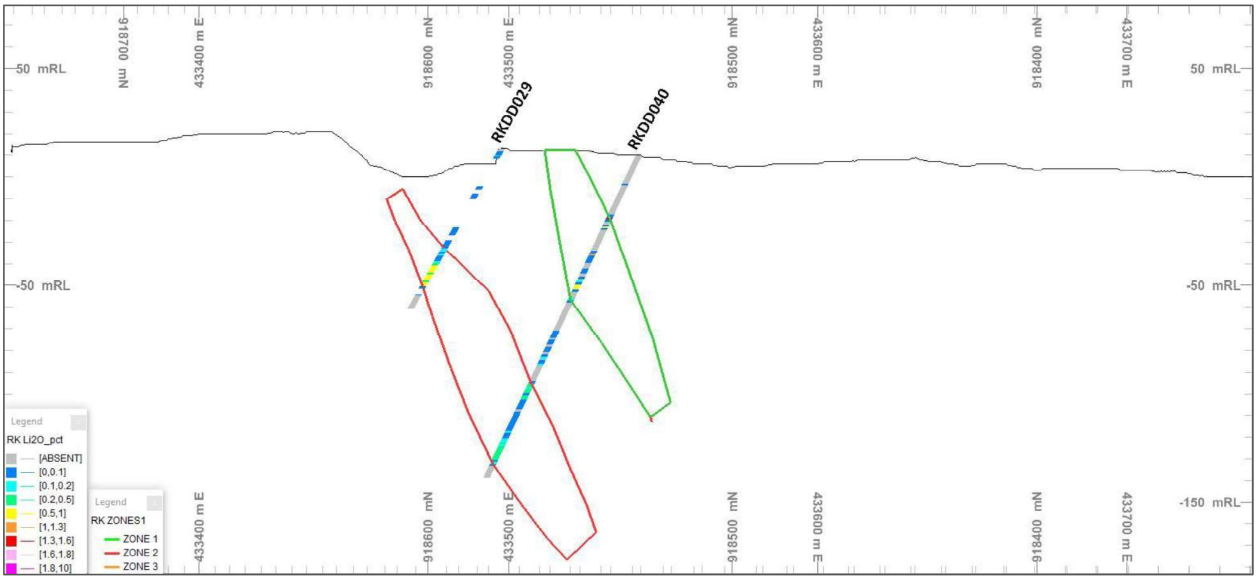


Figure 13: Reung Kiet section showing Li_2O grades in holes RKDD029 and RKDD040 and mineralisation domains

Zone 2 is the main mineralised zone domain comprising the pegmatite dykes and siltstone zones located below Zone 1. Zone 2 thickness averages 60 m and includes unsampled intervals.

Zone 3 comprises the deeper part of the mineralised zone and averages 15 m in thickness. This domain has not been adequately defined as it has been demarcated by 15 deep holes drilled on eight sections. More drilling targeting Zone 3 is required to confidently determine its extents. All three zones are separated by Zone 0 which has background Li_2O grades and largely unsampled. Zone 0 is generally hosted by unmineralised siltstone.

7.4 Weathering

The weathering profile was generated from the logging. Two-point files were generated in Datamine with one using the base of complete oxidation (BOCO) logged depth and the other file using the top of fresh rock (TOFR) logged depth. The point files were used to generate the BOCO and TOFR DTMs (Figure 14). The block model and drillholes were then flagged with weathering field OXIDE. OXIDE=1 represents the completely oxidised material above the BOCO surface and below the topography. OXIDE=3 is the fresh rock which is defined by the area below the TOFR surface. The area between the BOCO and the TOFR surfaces was flagged as OXIDE=2. This represents the transition material and comprises the partially oxidised material. The width of the transition zone ranges between 0.1 m and 22 m and averages 7.1 m.

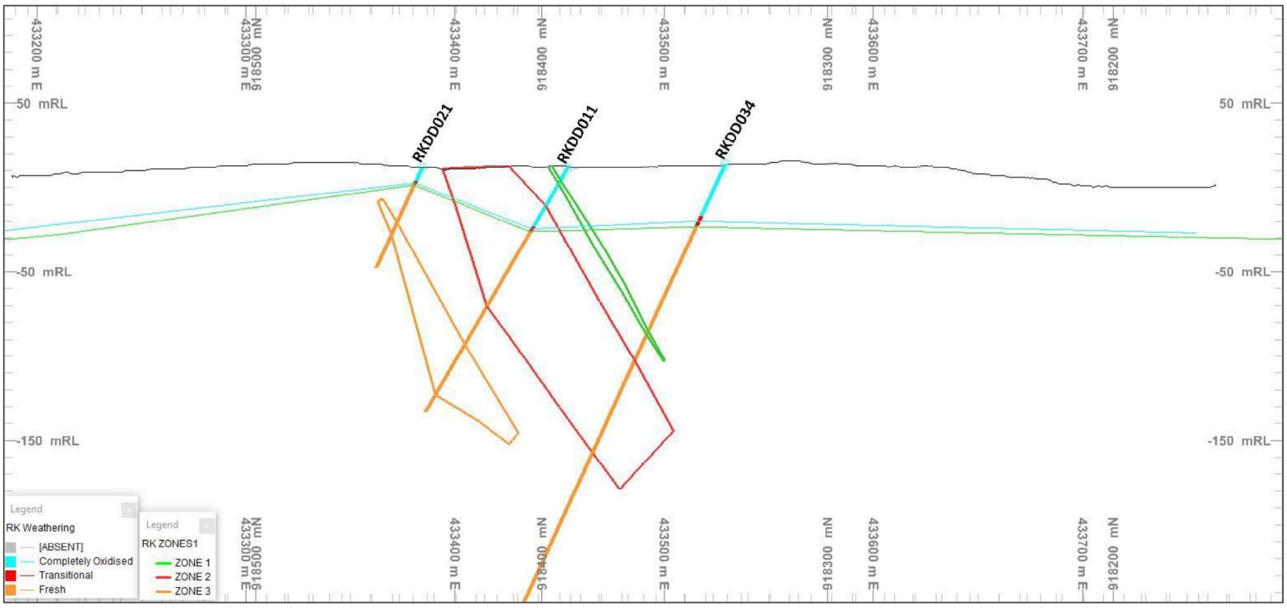


Figure 14: Reung Kiet section showing holes RKDD021, RKDD011 and RKDD034, weathering and mineralisation domains

8 Statistical and Geostatistical Analyses

8.1 The Statistical and Geostatistical Workflow

Having considered the dimensions of the mineralised pegmatite vein swarms and intercalated siltstones, it is CSA Global's view that by applying a linear estimator such as OK, excessive smoothing will be introduced. Mining operations are planned and designed based on block models.

A fundamental consideration is the choice of block dimensions or SMU, which affects the operation and mining costs. In the early stages of mining operations, the available information is mainly drillholes samples, which may bring negative outcomes such as over-smoothed models, especially for complicated ore deposits. Therefore, a change of support is necessary to determine the distribution of grades at an equivalent volume to the SMU size.

The non-linear LUC method is appropriate for improved grade estimation of small blocks, when the input data spacing is coarse such as it is at Reung Kiet, where nominal spacing is 50 m x 50 m. Generally, when the density of drillhole information is relatively low compared to the desired estimation block size, the estimation of these "small" blocks by the usual linear methods (e.g. by IDW or OK) would normally lead to a distortion, in the form of smoothing, and of the real variability of the block grades. The result is that the prediction of metal and ore tonnages and the average grade of the metal/mineral above a cut-off, based on these estimates, is quite different to that of true block grades exposed when grade control drilling and mapping augment the data.

At Reung Kiet, the situation of estimating "small" blocks is further complicated by the nature of mineralisation where mineralised pegmatite vein swarms, often of only a few metres across, are intercalated with low-grade or barren siltstones. The nature of the mineralisation means that, for any given blocks size, a large proportion of the block will be unmineralised. The samples that are unmineralised along the trajectory of the drillhole have to be included as "trace" values because they indicate that a proportion of the block is likely to be unmineralised.

Samples are regularised to a common interval (sample support), and it is evident, from Figure 15, that a large proportion of the samples within the domain carry no grade and therefore dilute the average block grade and increase the tonnes. With the application of UC, each estimated panel (block) of 30 m x 40 m x 5 m, is discretised into SMUs (e.g. X = 5 m, Y = 10 m, Z = 5 m), meaning that each panel is represented by 24 SMUs, or each SMU is equal to about 4 % of the panel volume. When a cut-off is applied to the SMUs, a portion of the block, say 15 SMUs, will be below the cut-off and the other portion (nine SMUs) will be above the cut-off at a higher grade than the panel grade which would either be 100% below or 100% above the cut-off and that is a more realistic result given the style of mineralisation.

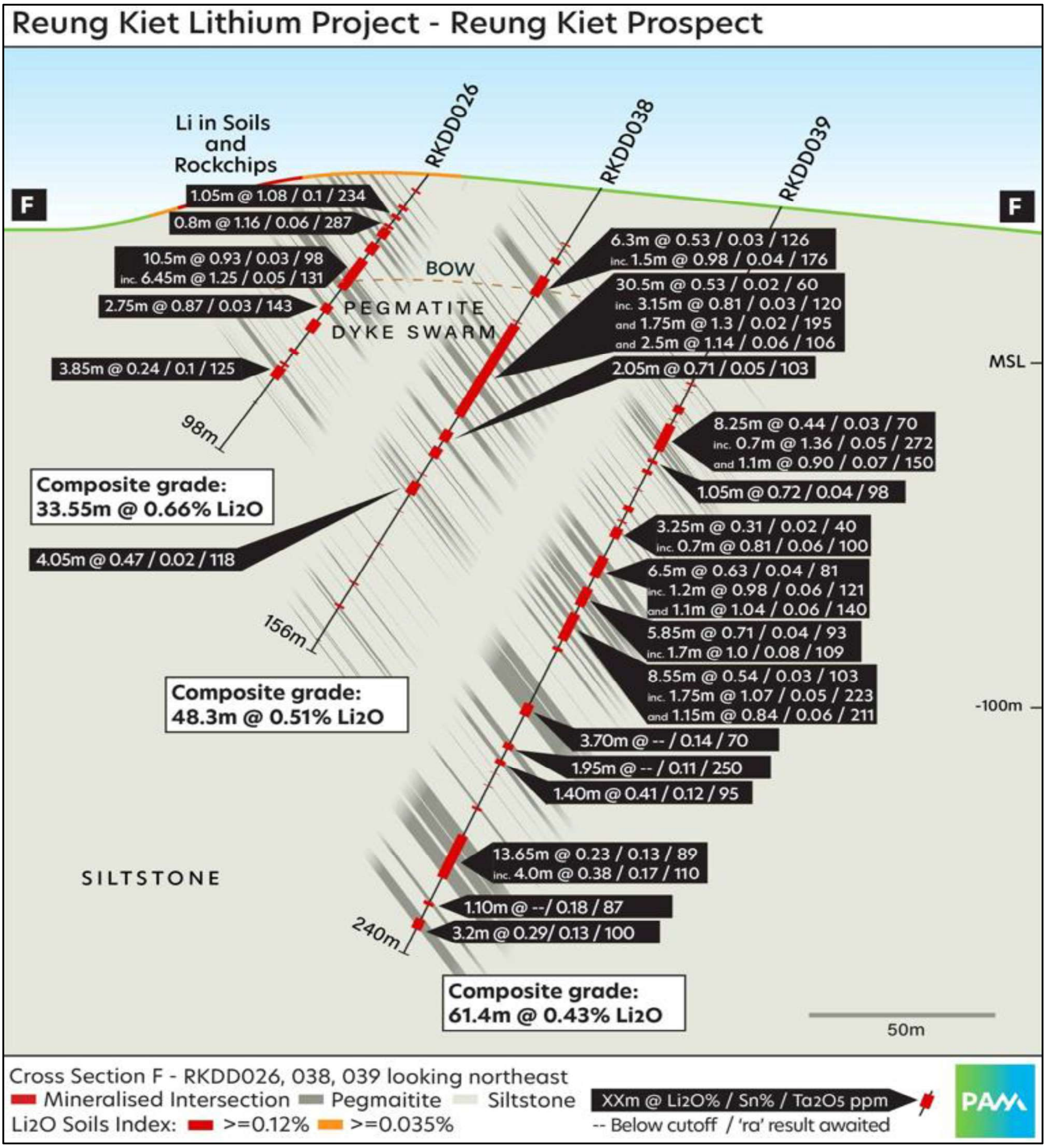


Figure 15: A typical cross-section showing the pegmatites and siltstones and sampled intervals

8.1.1 The Localised Multivariate Uniform Conditioning (LMUC) Workflow

1) Geostatistical analysis of Zone 2 oxide plus transition and fresh domains.
   a) Basic data quality control, including top cutting where necessary.
   b) Cell de-clustering of data.
   c) Analysis of the correlations between the different elements (caesium, lithium, rubidium, tin, tantalum) and the **main** element (lithium) for the group of variables was defined at this stage. Initially, the project was scoped to include the five elements mentioned, but at a later stage it was required to estimate only lithium, tin, and tantalum. Yet later, caesium and rubidium were again included and estimated by co-kriging or OK.

d) Multivariate Gaussian anamorphosis for the group of variables based on weighted histogram modelling. An example of the Gaussian transformation for Zone 2 Fresh, is presented in Figure 16. The mean of the Gaussian variables should be very close to zero (0) and the variance very close to unity (1).

e) Multivariate variogram modelling for the group of variables using the Linear Model of Coregionalisation framework. Gaussian transforms obtained at the previous step help with the modelling of the variogram. The multivariate gaussian variogram model is then back transformed into raw variograms using the Gaussian Anamorphosis procedure.

2) Ordinary co-kriging of all variables into 30 m x 40 m x 5 m panels. The choice between hard or soft boundaries was guided by the population statistics and the fact that metallurgical recoveries are different for the different weathering domains. A mixture of soft boundaries, between oxides and transition ores, and hard boundaries, between fresh and the oxide plus transition ores in Zone 2. For the main variable, the results of the estimations were qualified by calculating the regression slope [Z|Z*] and block kriging efficiency.
3) Multivariate change of support modelling was calculated on the SMU (5 m x 10 m x 5 m) support.
4) Multivariate Uniform Conditioning was implemented in all domains to calculate for each panel the metal contents for each element resulting from selection at a range of cut-offs applied to the main grade variable at SMU level.
5) Kriging of the cut-off variable at SMU support for ranking the SMUs that will contain the tonnage and metal contents estimated by Multivariate Uniform Conditioning.
6) LMUC module was run on the panels by domain, considering the proportions of SMUs of each domain within each panel.

8.1.2 Workflow where LMUC was not Applied

The premise for undertaking a recoverable resources estimate is that, given the data (drillhole) spacing and considering the style of mineralisation, it is not possible to directly estimate blocks (SMUs) of a size that will be appropriate for mining. The SMU dimensions are 5 m x 10 m x 5 m, whereas drillhole spacing is approximately 50 m x 50 m. Simple quantitative kriging neighbourhood analyses will show whether estimates for SMUs are conditionally biased, and if they are, a larger estimation block needs to be considered but that may not suit the mining method if it is to be selective. It is known from geometry of the mineralisation that there is little value in estimating blocks at the panel size (30 m x 40 m x 5 m) because there will be excessive smoothing and the whole block is likely to be either above or below the cut-off. It is essential to be able to split the panel into SMUs.

It is possible to undertake a change of support to reflect the theoretical grade tonnage curves for SMUs, then when estimating, by OK, the input parameters can be adjusted to provide a grade-tonnage curve which is realistic, not too smoothed, compared to the change of support grade-tonnage curves. This is permissible, provided that the input parameters are reasonable and generate acceptable quantitative kriging neighbourhood analysis parameters.

Global change of support using the Gaussian Model was carried out to calculate the global recoverable resources after the primary variable (Li ppm) variogram of Gaussian values was back-transformed into the raw values variogram. The implementation of the change of support was performed after normalisation of the variogram sills to match the theoretical variances of the modelled histogram.

The Discrete Gaussian framework which is discussed in the section on UC is used as a change of support model to generate global recoverable resources. This method requires only a point histogram and point variogram (for each element) and does not produce a block model nor does it attempt to give a spatial location to the mining blocks. No estimation is undertaken. The method produces grade tonnage curves and therefore has the advantage that realistic proportions at specified cut-off grades, not smoothed by small block estimation, are being produced.

The following steps are undertaken to generate block grade-tonnage curves:

1) Model the histogram of the composited (point) data using Hermite polynomials; the distribution has previously been de-clustered to remove any bias resulting from preferential drilling.
2) Model the point raw data variogram.
3) Use the variogram and Krige's relationship to determine the expected variability of the mining block.
4) Generate the distribution of mining units by adjusting the point histogram to reflect the variability of the mining units.
5) For a range of cut-offs, the grade-tonnage relationship can be determined for that block size.

In Step 1 the raw composites *Z(x)* are converted into Gaussian equivalents *Y(x)*; this transform is referred to as "Gaussian Anamorphosis" and the anamorphosed variables have values between 0 and 1. This transformation is one-to-one making it possible to back-transform or "reconstruct" the raw composites from the anamorphosed variables. The ogive of the new variable is modelled by means of the Hermite polynomials.

In the "generalised permanency" model it is assumed that the distribution of block *(v)* grades can be expressed in terms of a Hermite polynomial expansion. The coefficients of the Hermite polynomials are the same for the blocks *(v)* as were established for the composites *(x)*. The assumption is made that pairs of Gaussian transformed values *[Yx,Yv]* are bigaussian with a correlation coefficient *r*.

In Zone 1, all mineralised Domains, and Zone 3, Fresh Domain, all steps a) to e) under point 1 above (Section 8.1.1) were carried out in the same sequence, followed by:

1) Multivariate change of support modelling was calculated for the SMU (5 m x 10 m x 5 m) support.
2) Ordinary co-kriging of all variables into panels 5 m x 10 m x 5 m panels. The choice between hard or soft boundaries was guided by lithology, sample statistics and the fact that metallurgical recoveries are different for the different weathering domains.
3) Comparison of grade tonnage-curves.

8.2 Sample Regularisation and Statistical Analyses by Weathering Domain

8.2.1 Sample Regularisation

Geochemical samples used for statistical and geostatistical analyses must be of the same support (volume) so it may be necessary to regularise them to a standard length. A statistical analysis of the mineralised sampling interval yielded the results presented in Table 11. Most sample lengths were 1 m, and the average is 0.89 m. Regularisation should not only consider the average or predominant length of the samples, but it should also consider the dimensions of the actual mineralised intervals and the selective nature of the planned mining method. Bulk mining may composite over several sampling intervals to match bench heights, or as in this case where the mineralised pegmatites are at most in the tens of metres, compositing was done to 1 m intervals.

Table 11: Sample length statistics

Count of data	Minimum (m)	Average (m)	Maximum (m)
3,570	0.1	0.89	1.8

8.2.2 Statistical Analyses

The three mineralised zones that were geologically modelled have been subdivided into three levels of weathering, namely Oxidised, Transition and Fresh Ore domains. After regularisation to 1 m intervals, statistical analyses were carried out by zone and weathering domain.

Given the intercalated nature of the pegmatite veins and siltstones (refer to Figure 15), the wireframes which encapsulate the three zones, include many unsampled intervals, and these unsampled intervals were assigned grades at half the level of the minimum grade for each element.

Table 12 to Table 18 show the statistics for 1 m composites by zone and by weathering domain. Composites for all Zone 1 weathered domains were combined as there are insufficient samples for geostatistical analyses in separate weathering domains; even then variographic analysis was not robust. For Zone 2, which is the largest mineralised domain, the oxides and transition ores were combined for the same reason as the Zone 1 data were. Zone 2 fresh and Zone 3, which comprises of only fresh ore, were each analysed and estimated separately.

Table 12: Statistics of raw composites for Zone 1 oxidised ore

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	62	0.50	5500	1446	1496	1.00	0.85	0.68
Sn	62	0.50	678	195	193	0.85	1.00	0.73
Ta	62	0.00	222	58	61	0.68	0.73	1.00

Table 13: Statistics of raw composites for Zone 1 transition ore

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	6	90.50	1955	763	791	1.00	0.94	1.00
Sn	6	8.30	318	133	126	0.94	1.00	0.94
Ta	6	0.40	53	18	24	1.00	0.94	1.00

Table 14: Statistics of raw composites for Zone 1 fresh ore

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	104	0.50	4680	697	906	1.00	0.72	0.52
Sn	104	0.50	788	137	187	0.72	1.00	0.78
Ta	104	0.00	250	35	57	0.52	0.78	1.00

Table 15: Statistics of raw composites for Zone 1 all ore

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	187	0.50	5500	909	1183	1.00	0.78	0.63
Sn	187	0.50	788	149	186	0.78	1.00	0.77
Ta	187	0.001	250	40	58	0.63	0.77	1.00
Cs	187	1.00	626	134	123			
Rb	187	4.50	5350	919	1080			

Table 16: Statistics of raw composites for Zone 2 oxidised and transition ores

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	741	0.5	9030	1684	1917	1.00	0.80	0.76
Sn	741	0.5	1000	200	219	0.80	1.00	0.81
Ta	741	0.001	350	57	62	0.76	0.81	1.00
Cs	741	1.00	2583	240	208			
Rb	741	4.50	15944	1351	1514			

Table 17: Statistics of raw composites for Zone 2 fresh ore

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	1,663	0.5	7400	1138	1351	1.00	0.55	0.74
Sn	1,663	0.5	2000	302	413	0.55	1.00	0.66
Ta	1,663	0.001	250	44	51	0.74	0.66	1.00
Cs	1,663	1.0	350	156	131			
Rb	1,663	4.5	5238	1185	1209			

Table 18: Statistics of raw composites for Zone 3 fresh

Variable	Statistics					Correlation matrix		
	Count	Minimum	Maximum	Mean	Standard deviation	Li_ppm	Sn	Ta
Li_ppm	200	0.5	3430	612	649	1.00	0.29	0.40
Sn	200	0.5	3500	832	811	0.29	1.00	0.73
Ta	200	0.001	186	58	47	0.40	0.73	1.00
Cs	200	1.0	350	95	64			
Rb	200	4.5	3880	1345	972			

Of particular interest are the correlations between elements as they were used to make a judgement as to the practicalities of undertaking a multivariate estimation of the resources. In the multivariate case, it is important to identify whether one of the elements, the **main** variable, is generally better correlated to all other elements and while it is preferrable that that element is the one of most economic importance, it is not essential as a metal equivalent cut-off grade can be applied.

It is worth mentioning that only Zone 2 oxide plus transition and Zone 2 fresh Mineral Resources were estimated by LMUC, so it was in this zone where the identification of the **main** variable was most important. Lithium (Li ppm) being the element of most economic interest, was found to be well correlated with tin and tantalum in all zones and domains other than in Zone 3 fresh and was selected as the **main** variable.

Zone 1 (all ores) was co-kriged and subjected to a multivariate global change of support, which was discussed in Section 8.1.2, but they are also reliant on there being, at least, a moderate correlation between elements. This condition is generally satisfied except for Zone 3 fresh ore where each of the elements lithium, tin and tantalum were estimated individually by OK and validated by a global change of support model.

After completing the modelling and estimation for lithium, tin and tantalum, PAM requested the inclusion of caesium and rubidium in the MRE. These two elements were then estimated independently in each of the domains and included in the Mineral Resource statement and in the grade-tonnage curves.

8.2.3 Top Cutting

All variables in all zones and domains were reviewed with respect to the number and impact of extreme grades. Parameters considered were the numbers cut, the impact on the mean grades and the continuity of the high-grade tail of the distribution. Table 19 to Table 22 present the cut and raw grades, with minimal impacts on the mean grades.

Table 19: Zone 1 all weathering domains

Variable	Count	Minimum	Maximum	Mean	Standard deviation
Li ppm Cut	187	0.5	5500	908	1182
Li ppm	187	0.5	7847	926	1260
Ta Cut	187	0.001	250	40	57
Ta ppm	187	0.001	514	42	67

Table 20: Zone 2 oxides and transition domains

Variable	Count	Minimum	Maximum	Mean	Standard deviation
Sn Cut	741	0.5	1000	200	219
Sn	741	0.5	1389	201	224
Ta Cut	741	0.001	350	57	62
Ta	741	0.001	713	58	66

Table 21: Zone 2 fresh domain

Variable	Count	Minimum	Maximum	Mean	Standard deviation
Sn Cut	1663	0.5	2000	302	412
Sn	1663	0.5	2423	303	415

Table 22: Zone 3 fresh domain

Variable	Count	Minimum	Maximum	Mean	Standard deviation
Sn Cut	200	0.5	3500	831	811
Sn	200	0.5	5286	840	849

8.2.4 Gaussian Anamorphosis Modelling

The geostatistical routines used for grade estimation in all domains make use of the Discrete Gaussian Model (DGM) and of the Gaussian transformed variables. After regularising (compositing) and applying top cutting, the data are de-clustered by zone and domain, this is more important when data are clustered and can remove data biases, high or low, if drilling has not been carried out on a regular grid. It is of less importance at Reung Kiet as there is very little data clustering, nevertheless de-clustering was undertaken.

The transformed Gaussian values should have a mean close to 0 (zero) and a variance close to unity (1), and Figure 16 shows that, as an example, it has been achieved.

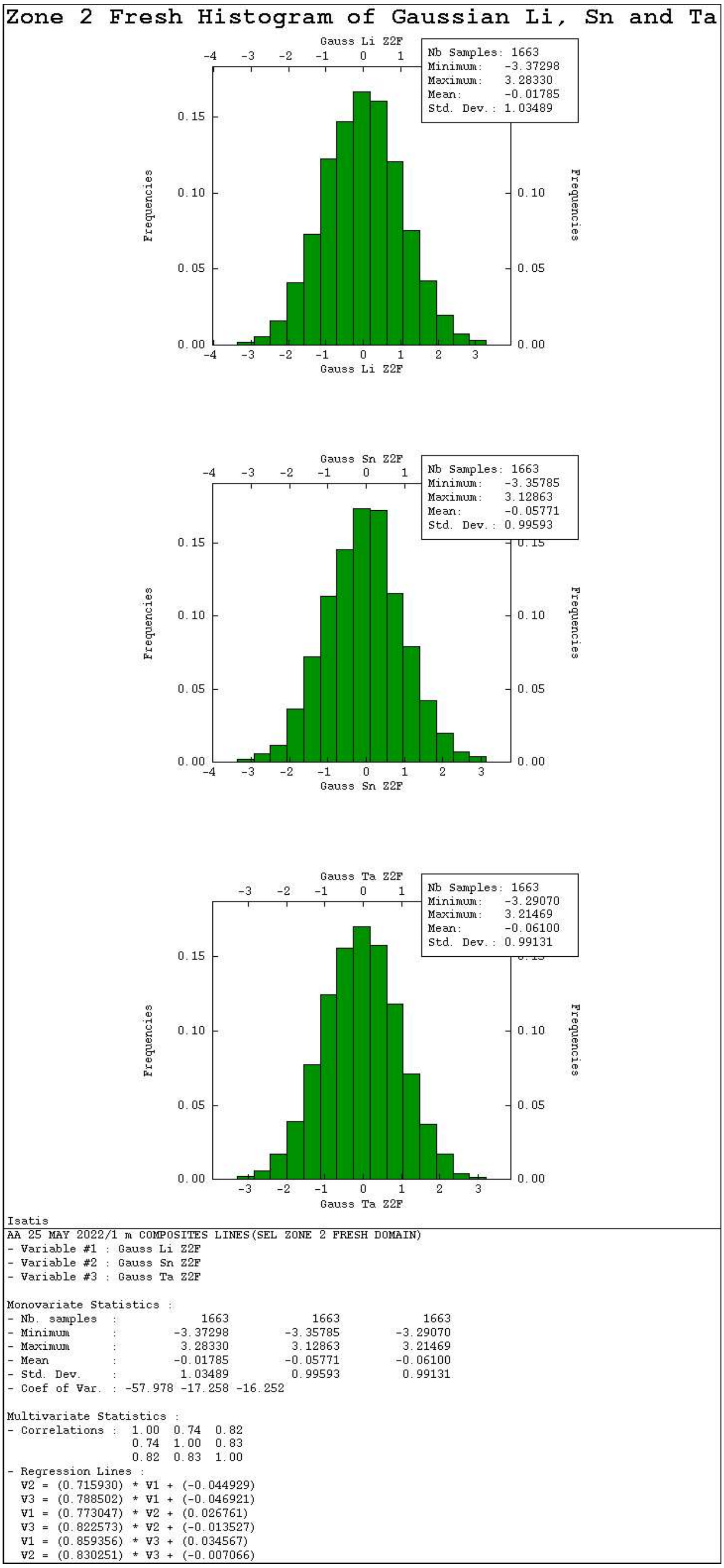


Figure 16: Zone 2 Fresh Gaussian histograms of Li, Sn and Ta grades

8.3 Variography

Zone 2 which has by far most of the data was modelled first and set the path to be followed for Zone 1 and Zone 3. It had been established from the correlation statistics that, in general, there was a moderate to strong correlation between the five elements. This does not automatically translate to there being the same moderate to strong spatial correlation between variables, but the study was approached as if there would be and that a multivariate approach would be successful.

For each domain and each group of variables the following workflow was adopted:

1) Multivariate Gaussian Anamorphosis using de-clustering weights for histogram modelling.
2) Multivariate Experimental Variogram Calculations in the mineralised planes defined.
3) Multivariate Gaussian Variogram Fitting, using combinations of spherical structures and a nugget effect.
4) Multivariate Gaussian to Raw Variogram transformations.
5) Multivariate Raw Variogram Fitting of the discretised variogram calculated above.

8.3.1 Zone 1 – All Domains Multivariate (Li, Sn, Ta) and Simple Variography (Cs, Rb)

Zone 1 comprises of the three weathering domains, namely oxides, transition and fresh ores, but contains a low number of data: 62, 6 and 104 for the respective domains. Although it would have been preferred to model each domain separately that was not possible and the data from the three domains were combined for the remainder of the geostatistical study.

As was expected, given the low sample count, variography was not robust for Zone 1, but is adequate to be used for geostatistical computations. Major continuity was modelled along strike (N30°E) with a dip of -40° to the east. The across strike experimental variogram is poorly defined by, at most, two rows of holes. The Gaussian model was fitted using an automated fitting and the back-transformed multivariate model is shown in Figure 17. The effective ranges are about 150 m along the major and 50 m along the semi-major axes and the orthogonal direction has a range of about 9 m.

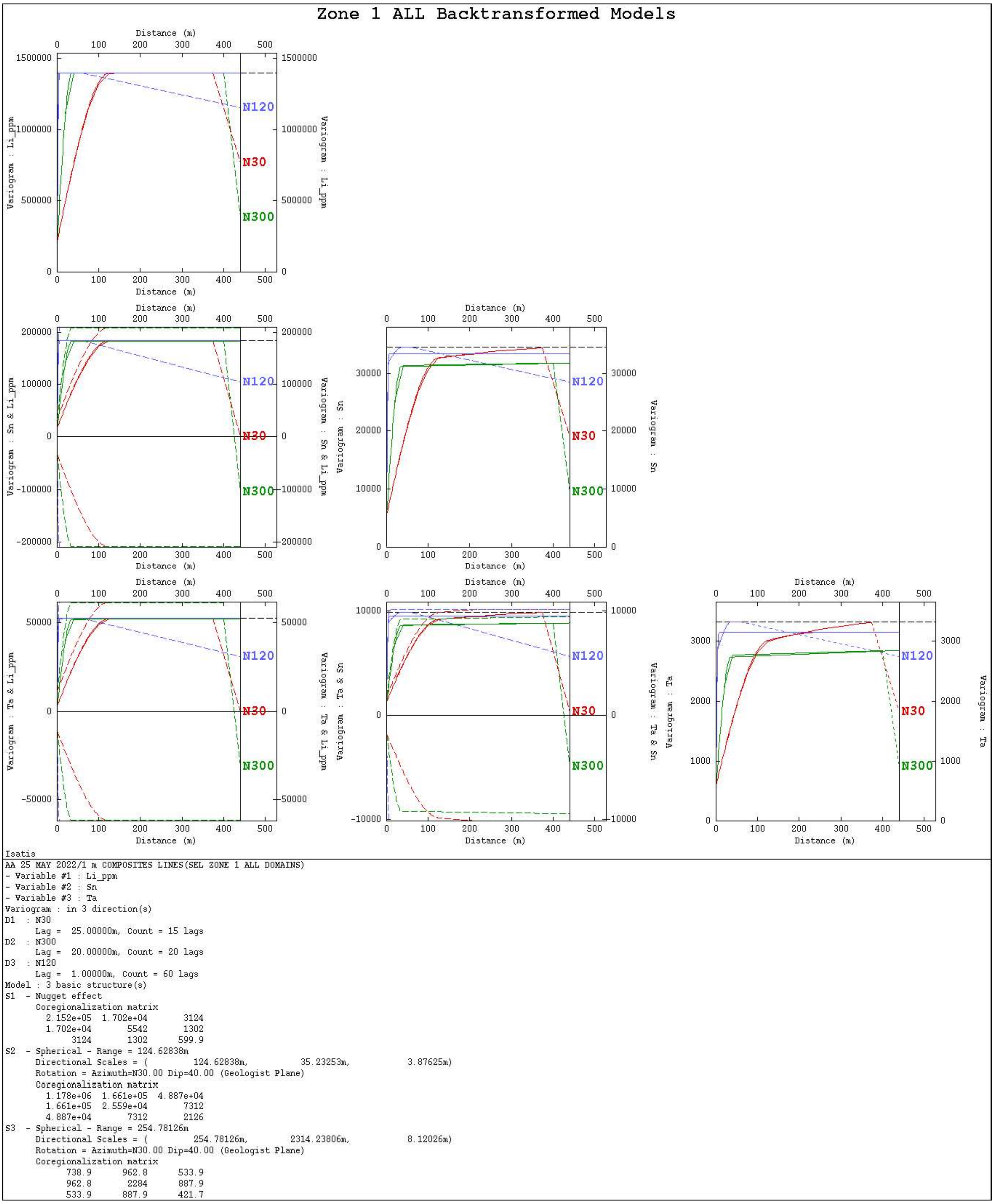


Figure 17: Zone 1 - All domains multivariate back-transformed multivariate (Li, Sn, Ta)

The modelled caesium and rubidium variograms are presented in Figure 18 and they were modelled independently. The across strike, in plane of the orebody, direction shows no structure from a limited amount of data.

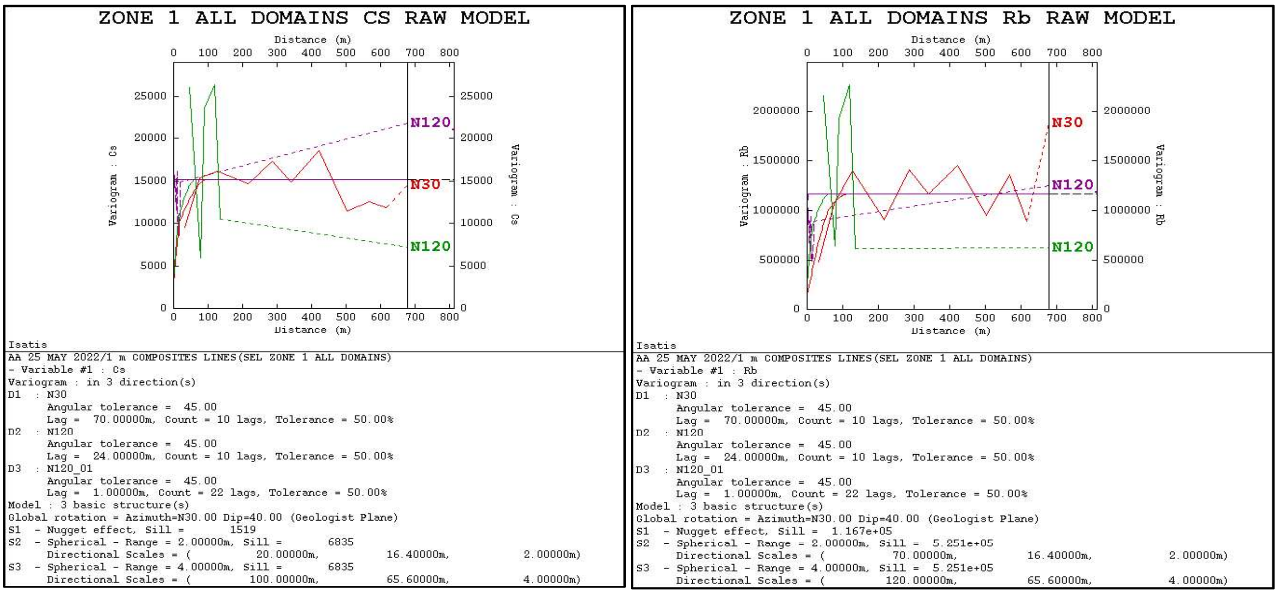
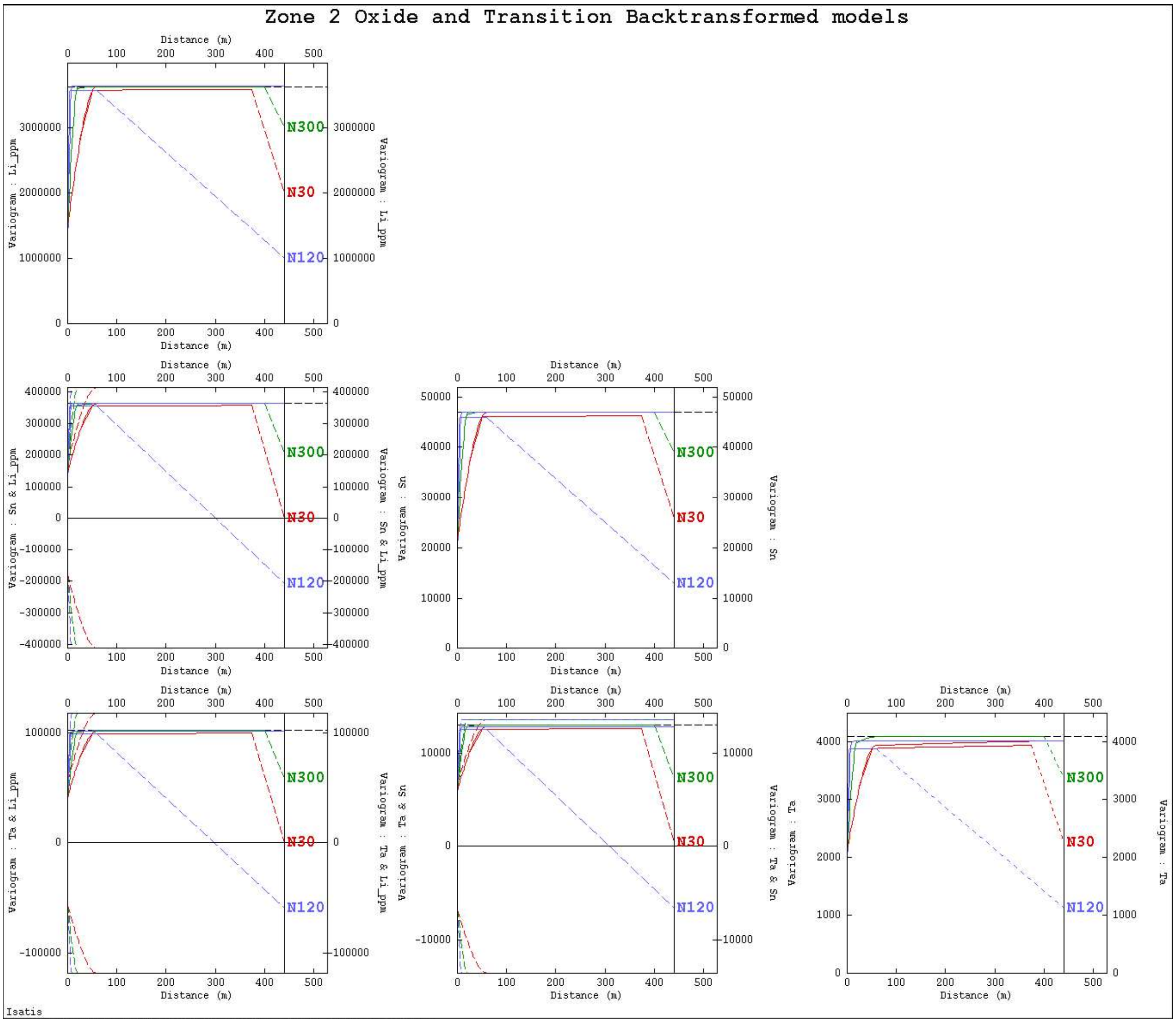


Figure 18: Zone 1 all domains Cs (left) and Rb (right) variogram models

8.3.2 Zone 2 – Oxide and Transition Domains Multivariate (Li, Sn, Ta) and Simple Variography (Cs, Rb)

Zone 2 comprises of the three weathering domains, namely oxides, transition and fresh ores, but contains a low number of data: 119, 592 and 1663 for the respective domains. An attempt was made to model the three domains independently, but it was not possible to find any structures to the experimental variograms in the transition ore (119 samples), therefore the samples were combined with those from the oxidised domain for further geostatistical analyses.

Variography was modelled along strike and in the direction orthogonal to the plane of mineralisation, although this direction shows a very short range. Major continuity was modelled along strike (N30°E) with a dip of -10° to the east. The across strike experimental variogram is poorly defined by, at most, two rows of holes. The Gaussian model was fitted using an automated fitting and the back-transformed multivariate model is shown in Figure 19. The effective ranges are about 50 m along strike and 25 m along the semi-major axes and the orthogonal direction has a range of about 5 m.




```
AA 25 MAY 2022/1 m COMPOSITES LINES(SEL ZONE 2 OXIDE and TRANS DOMAINS)
- Variable #1 : Li_ppm
- Variable #2 : Sn
- Variable #3 : Ta
Variogram : in 3 direction(s)
D1   : N30
       Lag =  25.00000m, Count = 15 lags
D2   : N300
       Lag =  20.00000m, Count = 20 lags
D3   : N120
       Lag =  1.00000m, Count = 60 lags
Model : 3 basic structure(s)
Global rotation = Azimuth=N30.00 Dip=20.00 (Geologist Plane)
S1   - Nugget effect
       Coregionalization matrix
         1.506e+06   1.48e+05  4.271e+04
          1.48e+05   2.18e+04       6104
         4.271e+04       6104       2133
S2   - Spherical - Range = 59.07253m
       Directional Scales = (          59.07253m,          21.22426m,          8.77083m)
       Coregionalization matrix
         2.129e+06  2.144e+05  5.887e+04
         2.144e+05  2.511e+04       6665
         5.887e+04       6665       1788
S3   - Spherical - Range = 533.58333m
       Directional Scales = (         533.58333m,          17.10417m,         17.03750m)
       Coregionalization matrix
            0.1016     -1.193     -3.183
            -1.193      14.02      37.39
            -3.183      37.39      99.73
```

Figure 19: Zone 2 – Oxide and transition domains multivariate back-transformed variogram models

The modelled caesium and rubidium variograms are presented in Figure 20 and they were modelled independently. The across strike direction shows little structure and the direction orthogonal to the orebody plane shows good structure but with a very short range, which is not unexpected given the style of mineralisation.

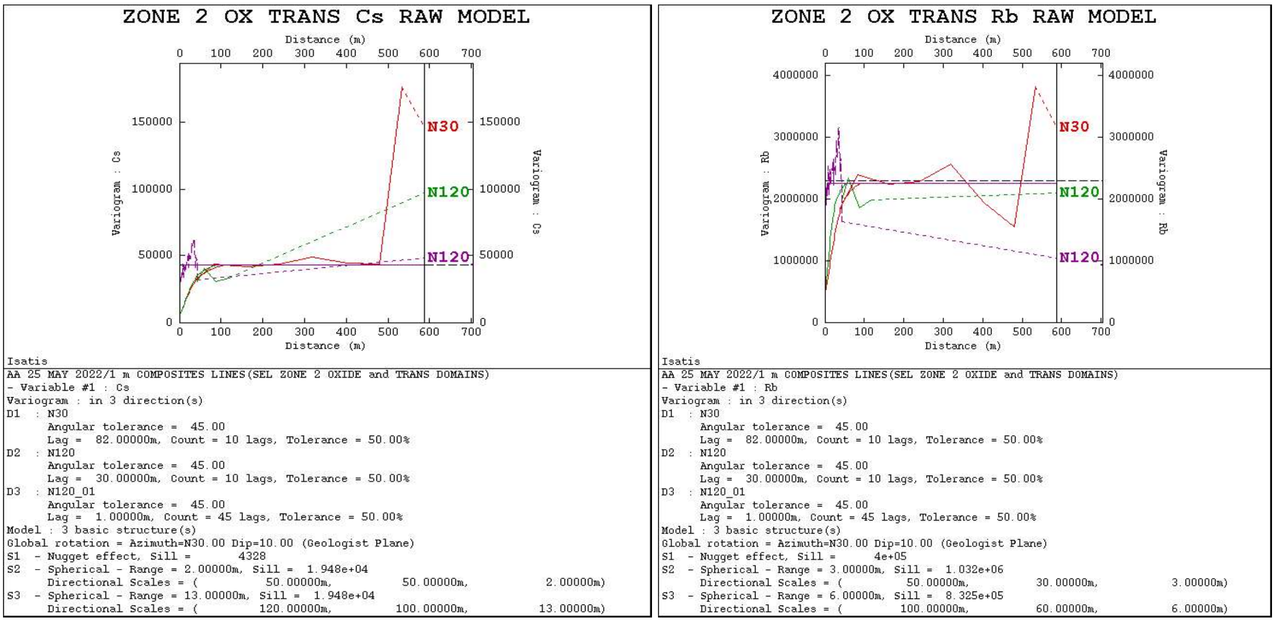


Figure 20: Zone 2 oxide-transition domains Cs (left) and Rb (right) variogram models

8.3.3 Zone 2 – Fresh Domain Multivariate (Li, Sn, Ta) and Simple Variography (Cs, Rb)

This domain contains by far most of the composites (1663) which generated well defined variogram structures along strike (N30°E) and in the direction (-60°E) roughly orthogonal to the mineralised plane. The orthogonal direction displays a relatively short first structure of about 4 m and a longer-range structure of about 70 m. Effective ranges along the major and semi-major are about 150 m. The back-transformed multivariate models are displayed in Figure 21.

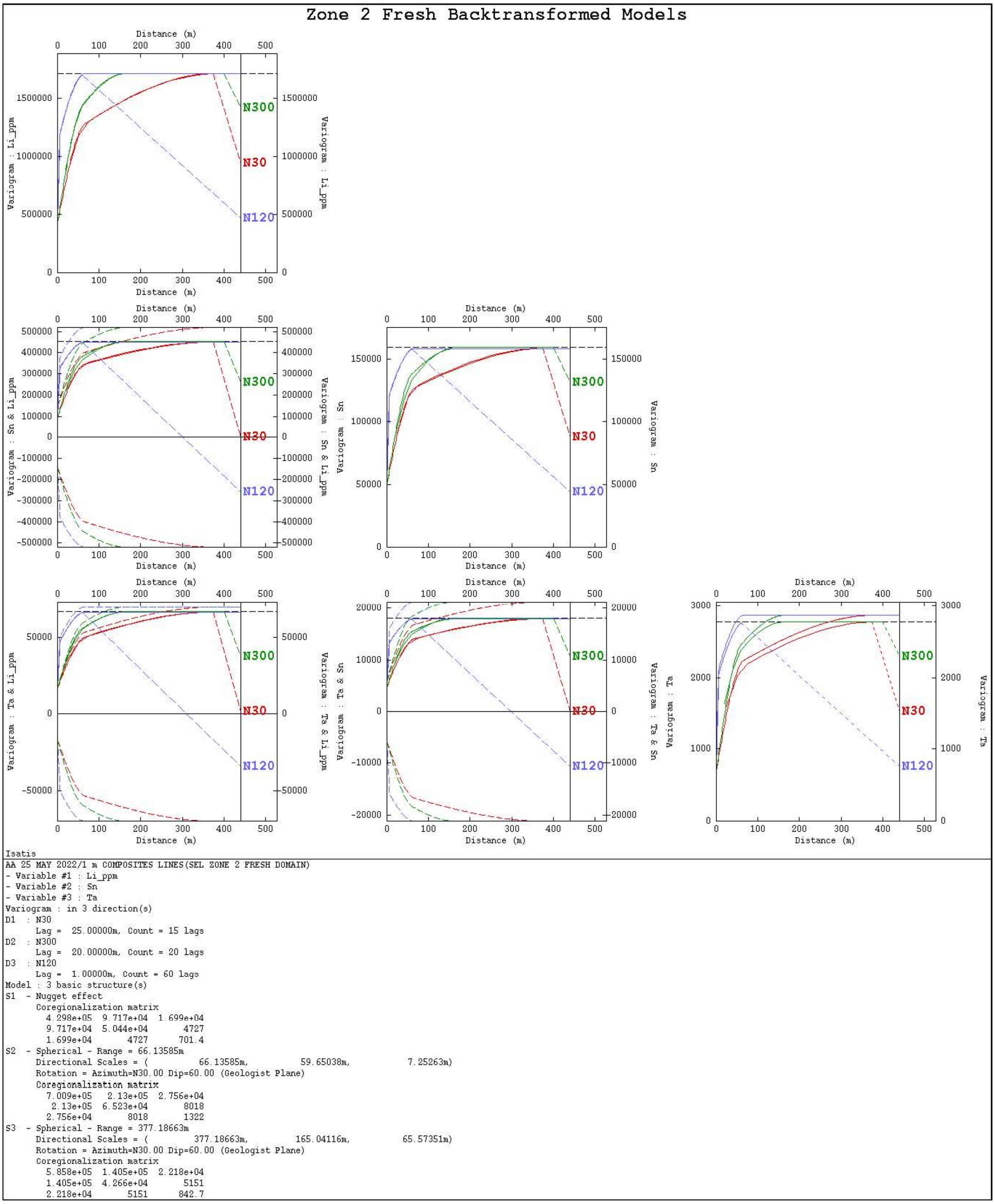


Figure 21: Zone 2 – Fresh domain multivariate back-transformed variogram models

The modelled caesium and rubidium variograms are presented in Figure 22 and they were modelled independently. The across strike direction shows an effective range of about 80 m and the direction orthogonal to the orebody plane shows a good short-range structure. The strike direction is reasonably well defined.

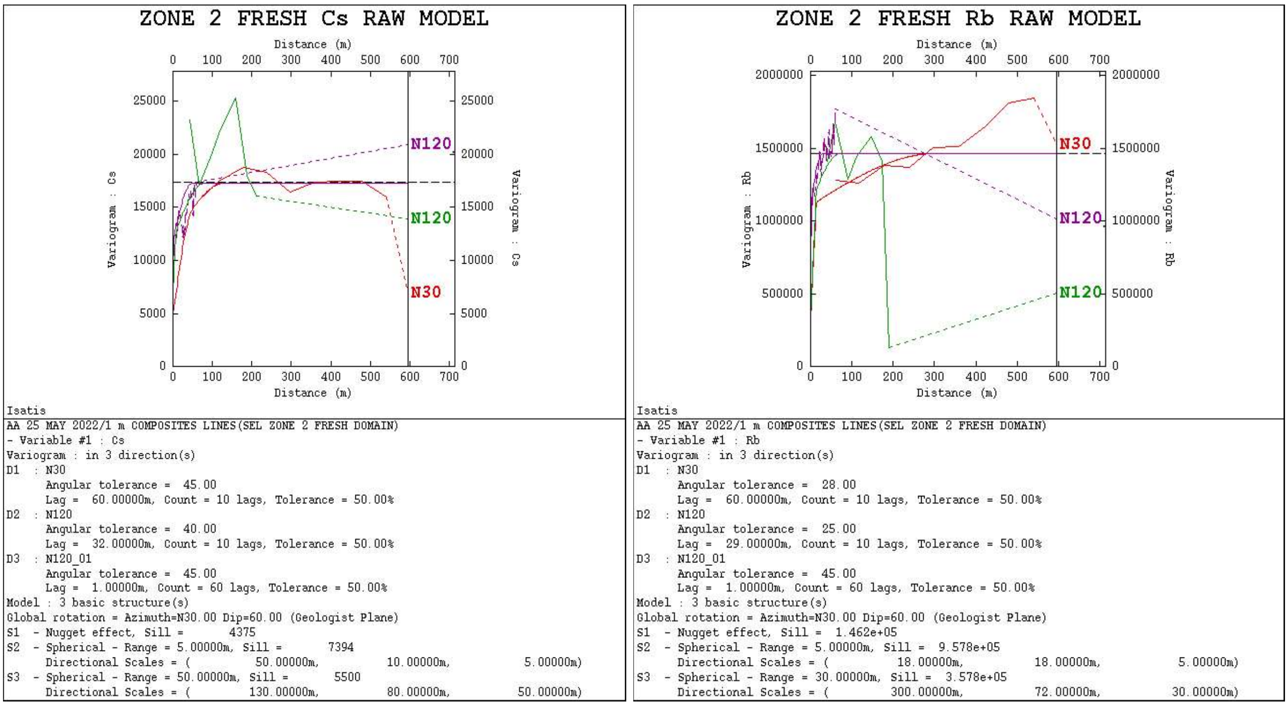


Figure 22: Zone 2 fresh domain Cs (left) and Rb (right) variogram models

8.3.4 Zone 3 – Fresh Domain Simple Variography (Li, Sn, Ta, Cs, Rb)

Zone 3 comprises of a fresh domain only and contains 200 samples. Because lithium is poorly correlated with tin and tantalum, each element was analysed individually with differing results. For lithium and tantalum, the strike direction (N30°) and the orthogonal direction (-45° NE 120°) showed moderate structures whereas the tin model was only defined in the orthogonal direction.

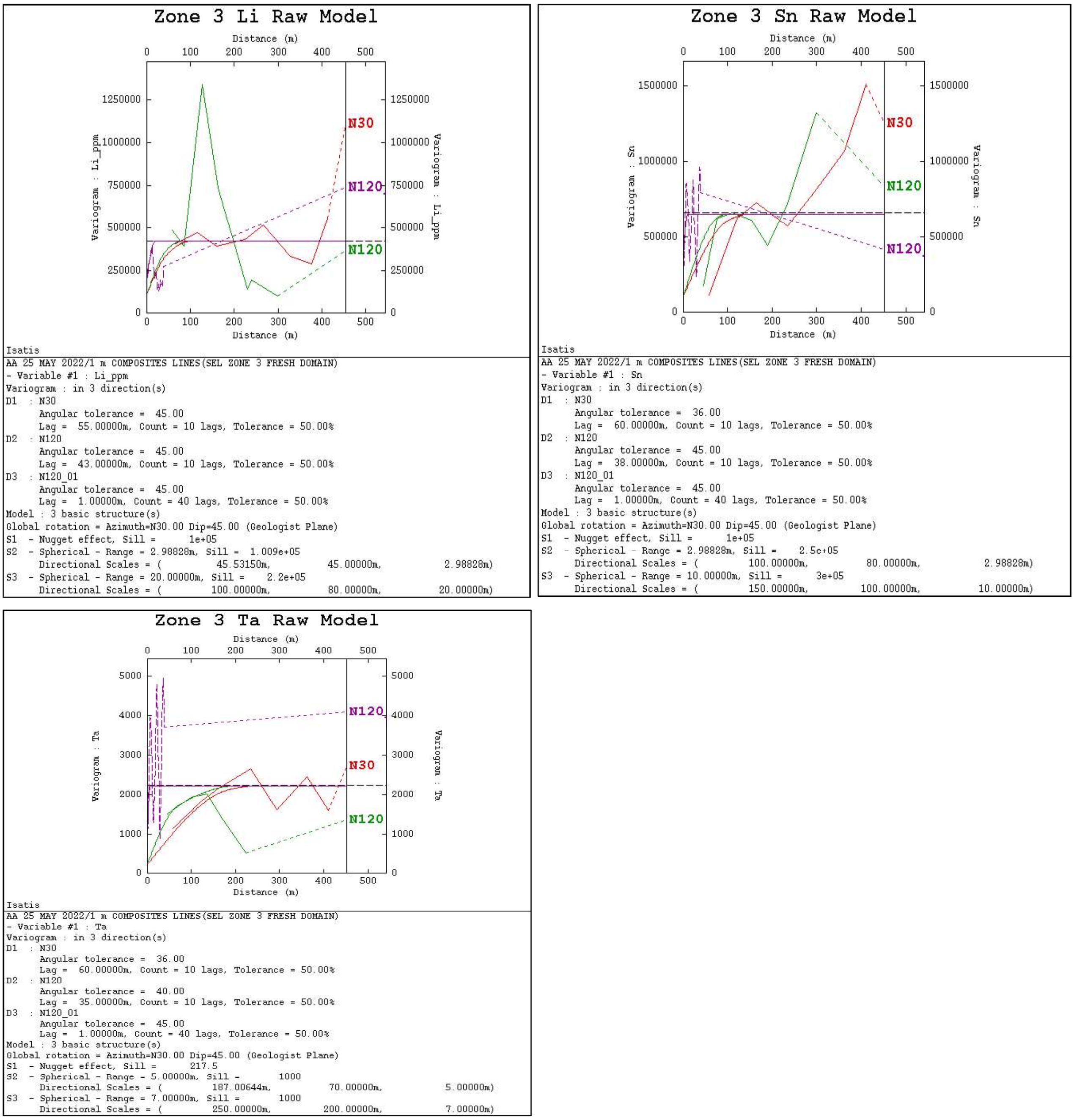


Figure 23: Zone 3 – fresh domain raw models Li (top left), Sn (top right and Ta (bottom)

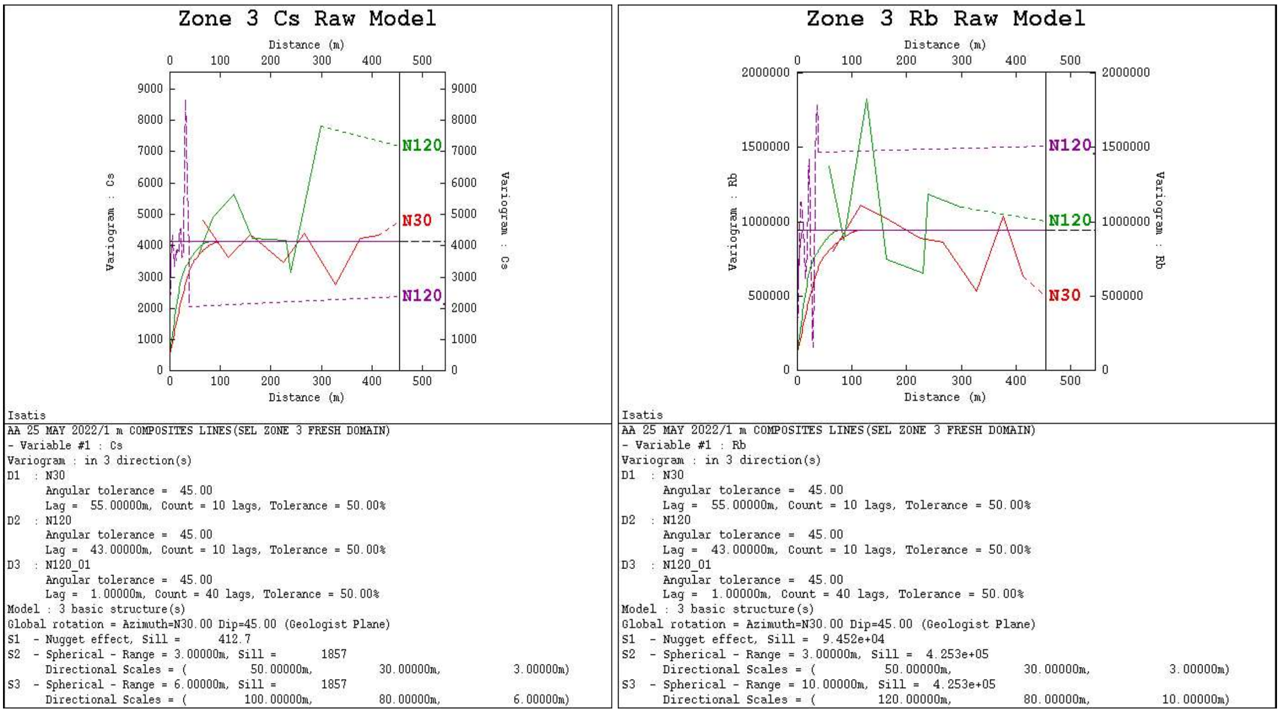


Figure 24: Zone 3 fresh domain raw models Cs (left) and Rb (right)

Although Zone 3 comprises of only fresh ore, some of the grades distributional characteristics appear quite complex. When undertaking the Gaussian anamorphosis, de-clustering was undertaken to remove any potential low-grade or high-grade biasing from clustered sampling and in typical cases it is not unusual to see changes between the raw and de-clustered means of ±10% for any element and usually there is a plateau at which the mean and variance stay reasonably constant. De-clustering was undertaken using 10 grids which range from a minimum of 50 m x 50 m x 10 m to a maximum of 100 m x 100 m x 50 m.

The horizontal green line in each graph (Figure 25), represents the mean grade and the red line the variance of the grades. From the smallest de-clustering cell, both lithium and tin show departure from the horizontal lines for both the mean and variance and for every successive cell size (increasing along the X axis) there is an incremental change to the mean and variance. The mean and variance for lithium increase consistently, whereas tin values initially decrease then start increasing. This behaviour is not fully understood, at this stage, but it is interesting to contrast the behaviour of lithium and tin, with that of tantalum where the mean grade meanders between about ±3% (absolute) of the mean and the variance decreases as the de-clustering block size increases, which is understandable.

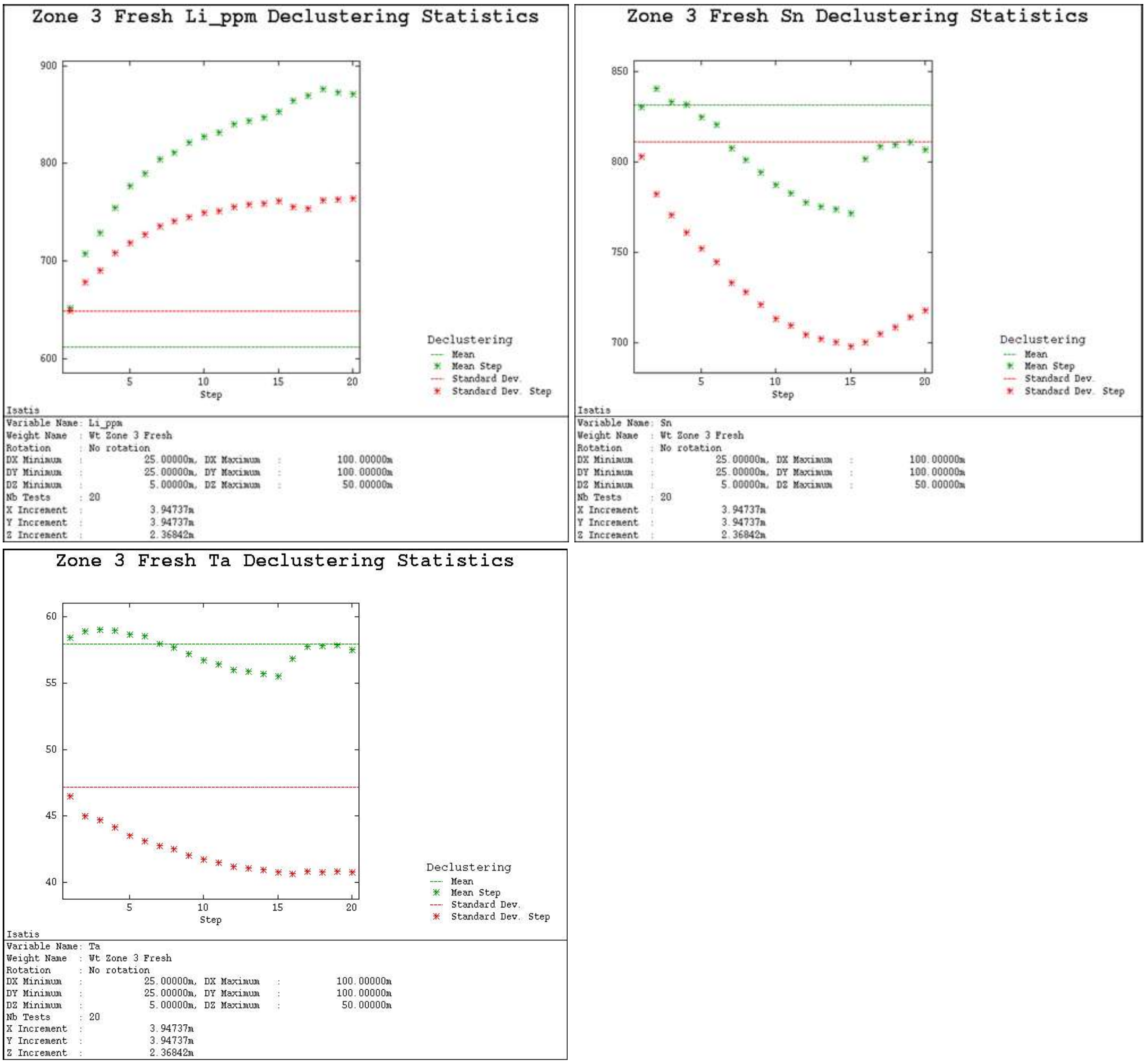


Figure 25: Declustering statistics for Li (top left), Sn (top right) and Ta (below left)

8.4 Estimation

8.4.1 Kriging Neighbourhood Analyses

The most frequently used technique for evaluating local recoverable resources is OK, and there are a number of tests which reflect the suitability of kriging in any given situation, and which depend on the number and positions of samples.

The advantages of using kriging for local estimation are well known optimal weights are assigned to data in such a way that they minimise the variance of error, while reflecting the structure and the geometry of the mineralisation.

In kriging tests, the same block can be tested (usually several blocks in varied positions) while the number of informing composites is modified (larger searches, altering minimum and maximum number of data, etc.) to obtain an idea of the changes in the quality of the estimation.

The criteria to look at when evaluating a kriging configuration are the following:

Kriging Variance

This gives an indication of the quality of the estimation and depends on the number of data used in the estimation and on the variogram. Note that one must be careful in using the kriging variance for building confidence intervals as this step requires supplementary hypotheses (that errors are normally distributed) which are rarely met in mining variables.

Slope of the Regression "True" Grade vs the "Estimated" Value

Ideally this should be very close to one (conditional unbiasedness). This implies that the recovered grade should be approximately equal to the predicted grade (obtained by applying a cut-off to the estimation). The "true" grade covariance is taken to be that modelled by the variogram.

Weight of the Mean

Instead of performing an OK, where the sum of the weights is set to one, a simple kriging (SK) is performed. This assumes that the global mean grade is known.

It can be shown that OK is the same as SK when the mean is replaced by its kriged estimation. Thus, the weight of the mean gives us a clear idea of the quality of kriging. The larger the weight of the mean, the larger the neighbourhood should be, and the resulting estimation smoother.

Kriging Efficiency

The kriging efficiency is expressed as the kriging variance *(σ^2_K)* normalised by the variance of the true blocks (σ^2) as a percentage. For block kriging, estimates are made on some volume, *V,* and the corresponding variance of the blocks is equal to the average covariance between points within the blocks: *C* (*V,V*). A high efficiency (>80%) means that the kriging variance is low, and the variance of the block estimates is approximately equal to the variance of the true block values. A low efficiency implies a high kriging variance relative to the block variance. The kriging variance varies from block to block, so the kriging efficiency will vary as well. For perfect valuations, the efficiency is 100%.

The weight of the mean can be obtained by SK using a global mean, and the slope of regression (SOR), which measures estimation bias, was derived from OK. It is usual to find that as the number of neighbourhood samples increases so the weight assigned to the mean decreases and the SOR increases. Using too large a neighbourhood will result in over-smoothing of estimates, so some caution is required if local estimation accuracy is sought. Rule of thumb values for "well" estimated blocks are that the weight of the mean should be as low as possible (±10%) else estimates will be smoothed and SOR should be >0.9.

Table 23: Neighbourhood parameters used for OK (includes UC and OK estimation)

Parameter	OK SMU Zone 1 All	UC PANEL Zone 2 Ox-Trans	UC SMU Zone 2 Ox-Trans	UC PANEL Zone 2 Fresh	UC SMU Zone 2 Fresh	OK SMU Zone 3 Fresh
Azimuth	30	30	30	30	30	30
Dip	-40	-20	-20	-60	-60	-45
Plunge	0	0	0	0	0	0
Minimum samples (P1/P2)	8/6	8/6	8/4	8/8	8/4	8
Maximum samples (P1/P2)	64/64	64	80/80	160/80	32/32	60
Number of sectors (P1/P2)	8/8	16	8/4	8/4	4/4	6
Distance major m (P1/P2)	100/200	200/200	100/200	75/160	100/200	200
Distance semi-major m (P1/P2)	40/150	100/200	50/200	50/120	60/150	150
Distance minor m (P1/P2)	15/20	30/100	30/100	25/30	25/30	20

8.4.2 Block Model Parameters

The panel dimensions were chosen to give robust kriging criteria and so that there is a sufficient number (24) of SMUs (5 m x 10 m x 5 m) to discretise the panel to define the grades and proportion of tonnes at different cut-off grades.

Table 24: Panel dimensions and model extents

Axis	Origin	No. of blocks	Block dimensions (m)	Model extent (m)
Easting (X)	433035	31	30	930
Northing (Y)	917955	32	40	1,280
Elevation (Z)	-314.5	75	5	375

8.5 Localised Multivariate Uniform Conditioning

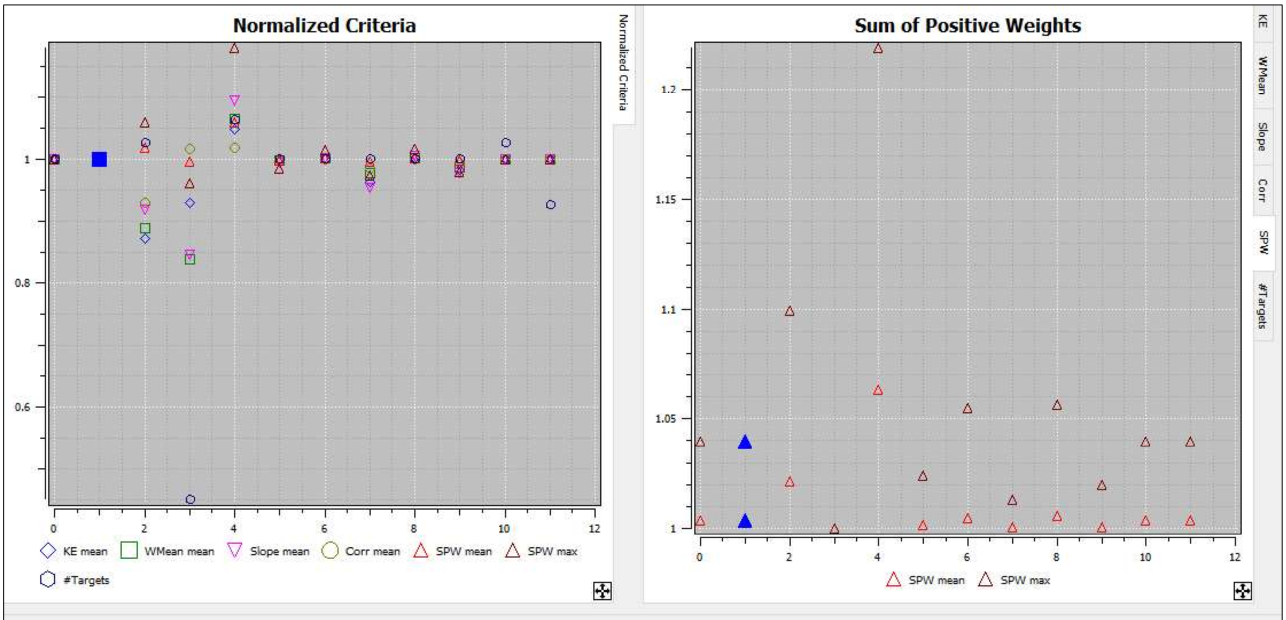
8.5.1 Zone 2 Fresh Domain

LMUC was selected for Zone 2 as this zone has by far the greatest number of composites and contains the overwhelming volume of resources. Domain 2 was divided into two domains, namely a Fresh domain and a combined Oxide plus Transition domain.

The quality of the results of LMUC is highly dependent on the robustness of the OK estimate of the panel (30 m x 40 m x 5 m). Lithium, caesium and tantalum generate moderate to high SORs, and the results will be unbiased. The data spacing and geometry of the drilling grid largely define the kriging criteria and the panel size.

The overall KNA statistics is a normalised diagram on which all the criteria are overlaid. The normalisation of each criterion is performed against the reference neighbourhood test which is given the value 1. The vertical scale can be interpreted as a gain factor: if a criterion gives a better result than the reference neighbourhood for a given test, the symbol will appear above the horizontal line 1. Conversely if a test shows a poor criterion value when compared to the reference neighbourhood the symbol will show below.

Figure 26 is an example of OK criteria which were generated from several tests by varying input parameters. Similar tests were carried out for all other domains where OK was applied. The neighbourhood used to estimate the Zone 2 Fresh Panels is ID 1 in Figure 26, and the average SOR is high (0.8615), and the weight of the mean is close to zero (-0.13) which indicates low estimation smoothing. Although ID 4 produces generally better results than ID 1, the percentage of negative weights is considered too high (22% maximum) and thus was not selected.



ID	Active	EllRot	EllFac	#Sect	#Opt/Sect	Split	#Min	KE mean	Slope mean	WMean mean	Corr mean	SPW mean	SPW max	#Targets
0	☑	[60.0°/OZ, 0.0°/OY, 60.0°/OX]	1.00	8.00	20.00	yes	8.00	0.6599	0.8615	-0.1331	0.8287	1.0036	1.0397	80.00
1	☑	[60.0°/OZ, 0.0°/OY, 60.0°/OX]	1.00	8.00	20.00	yes	8.00	0.6599	0.8615	-0.1331	0.8287	1.0036	1.0397	80.00
2	☑	[120.0°/OZ]	1.00	8.00	20.00	yes	8.00	0.5328	0.7914	-0.0078	0.7701	1.0215	1.0993	82.00
3	☐	[60.0°/OZ, 0.0°/OY, 60.0°/OX]	0.50	8.00	20.00	yes	8.00	0.5895	0.7294	0.0491	0.8421	1.0000	1.0000	36.00
4	☑	[60.0°/OZ, 0.0°/OY, 60.0°/OX]	1.50	8.00	20.00	yes	8.00	0.7083	0.9423	-0.2061	0.8441	1.0631	1.2191	85.00
5	☑	[60.0°/OZ, 0.0°/OY, 60.0°/OX]	1.00	4.00	20.00	yes	8.00	0.6581	0.8572	-0.1298	0.8282	1.0015	1.0242	80.00

Figure 26: Neighbourhood parameters and estimation criteria examples for Zone 2 Fresh Panel estimates

It is expected that when small blocks or SMU are estimated directly there will be smoothing, and the smoothing can be assessed by comparing the direct estimates to those from UC or a change of support model. In Figure 27, the grade-tonnage curves are shown for the direct estimates, and the UC results for lithium, and show relatively low smoothing. Figure 28 and Figure 29 are the equivalent grade-tonnage curves for tin and tantalum respectively, and tantalum shows similar results to lithium, whereas tin shows almost identical tonnages for both estimates but above a cut-off of 750 ppm smoothing becomes evident and the lines show departure. In general, the smoothing of all three elements is low.

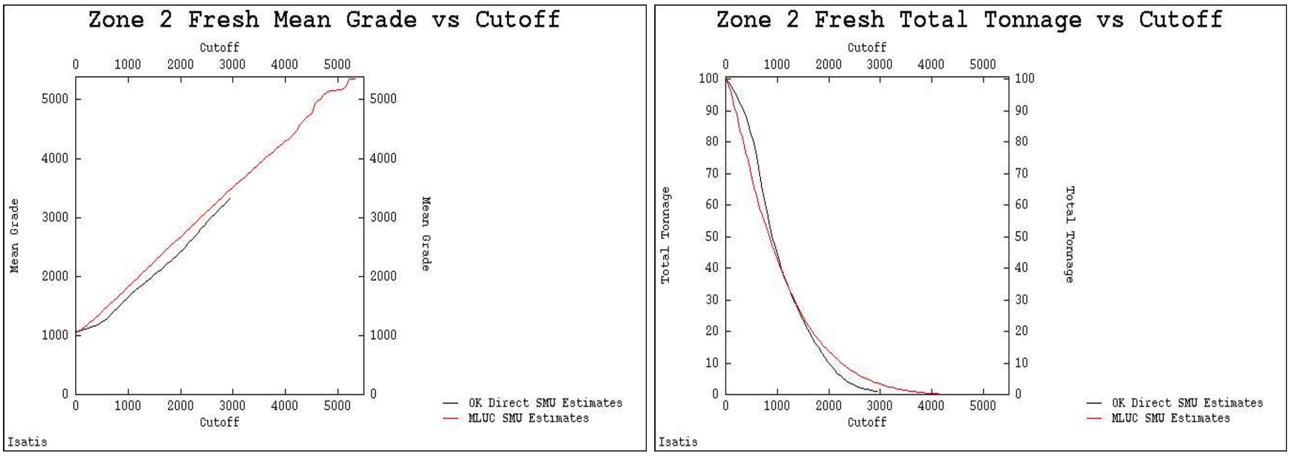


Figure 27: Zone 2 Fresh grade and tonnage curves for Li

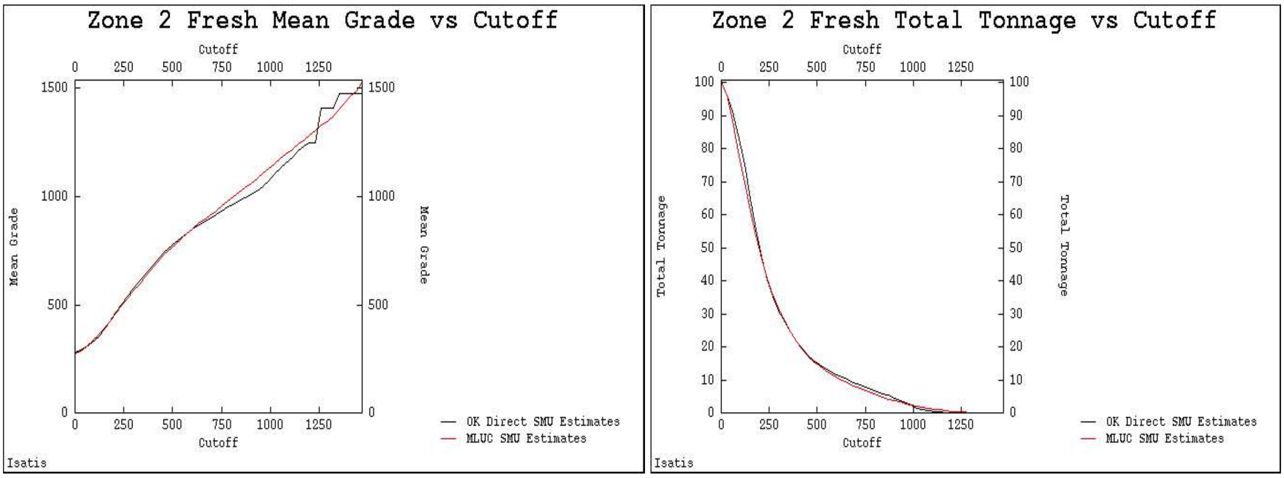


Figure 28: Zone 2 Fresh grade and tonnage curves for Sn

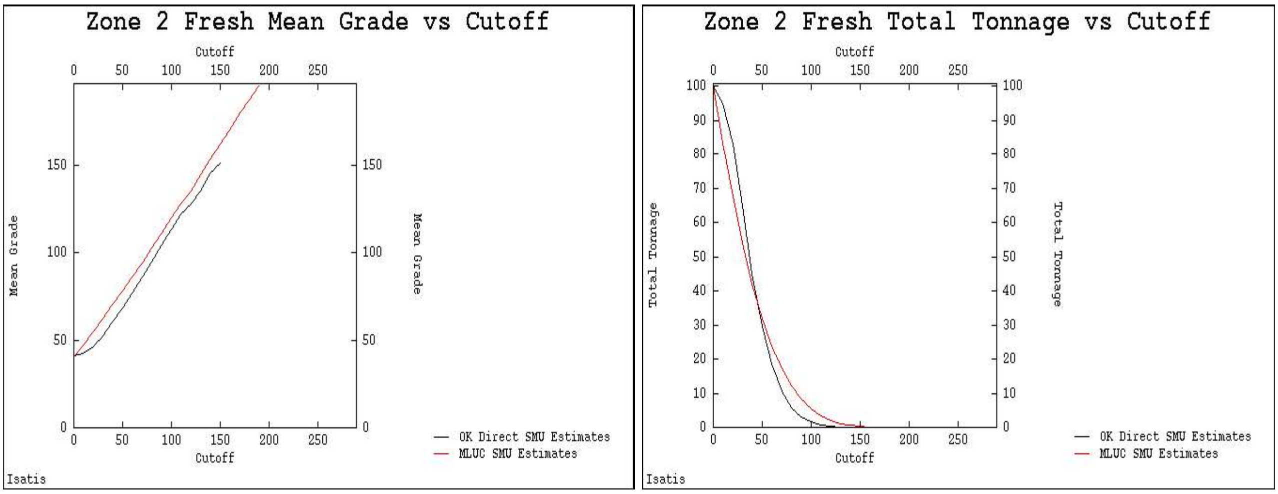


Figure 29: Zone 2 Fresh grade and tonnage curves for Ta

From Table 25 it can be observed that the mean grades of the composites are well reproduced by the two estimates, LMUC and direct OK, and it is insightful to see that the variance of the estimates for tin from the two estimates are very similar and that is why the grade-tonnage curves are similar. The variances for lithium and tantalum are significantly higher for the MLUC estimates than they are for the direct estimates, another sign that the direct estimates are more smoothed and although that is not evident from the grade-tonnages curves in Figure 27 to Figure 29, it will likely be manifested spatially. An example of such smoothing is presented in Figure 30 and Figure 31, which is quite subtle but much more evident in Figure 37 and Figure 38 for Zone 2 Oxide and Transition ores.

Table 25: Zone 2 Fresh comparative estimates for LMUC, direct SMU estimates and 1 m composite grades

Zone 2 Fresh	**Count**	**LMUC estimates**				**Direct SMU estimates**				**1m Composites**	
Variable		**Min.**	**Max.**	**Mean**	**Variance**	**Min.**	**Max.**	**Mean**	**Variance**	**Count**	**Mean**
EST Li	28,836	8.3	5342	1061	695692	10.0	4376	1067	428791	1,663	1138
EST Sn	28,836	4.2	1614	275	61706	1.0	1480	283	61005	1,663	303
EST Ta	28,836	0	145	41	993	1.0	151	41	502	1,663	44

Table 26: Zone 2 Fresh comparative statistics for direct SMU estimates and 1 m composite grades

Zone 2 Fresh	**Direct SMU estimates**				**1 m Composites**	
Variable	**Count**	**Minimum**	**Maximum**	**Mean**	**Count**	**Mean**
Cs	28,836	1.0	403	152	1,663	156
Rb	28,836	4.5	3425	1128	1,663	1185

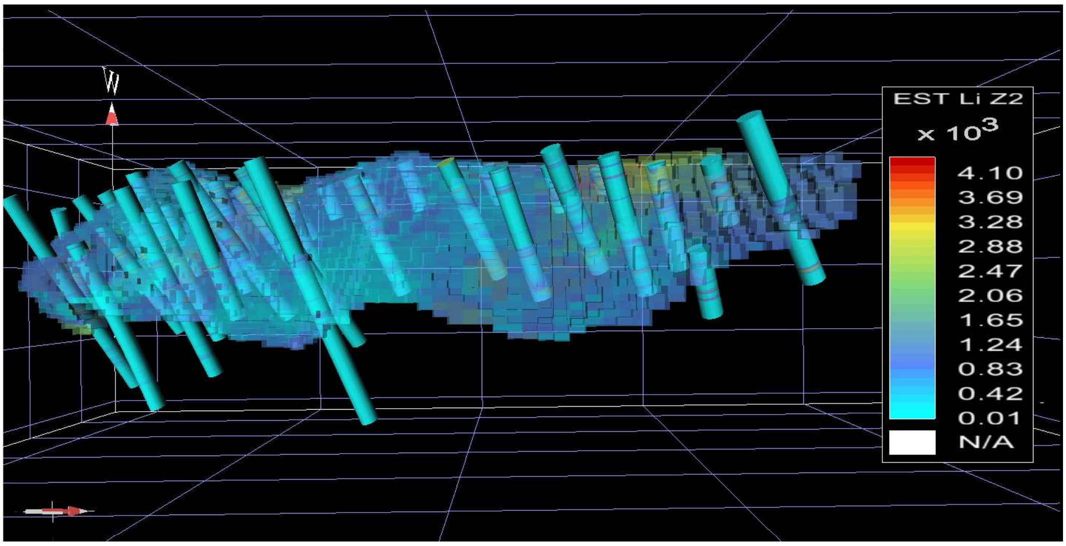


Figure 30: View looking west of direct OK estimates for SMUs

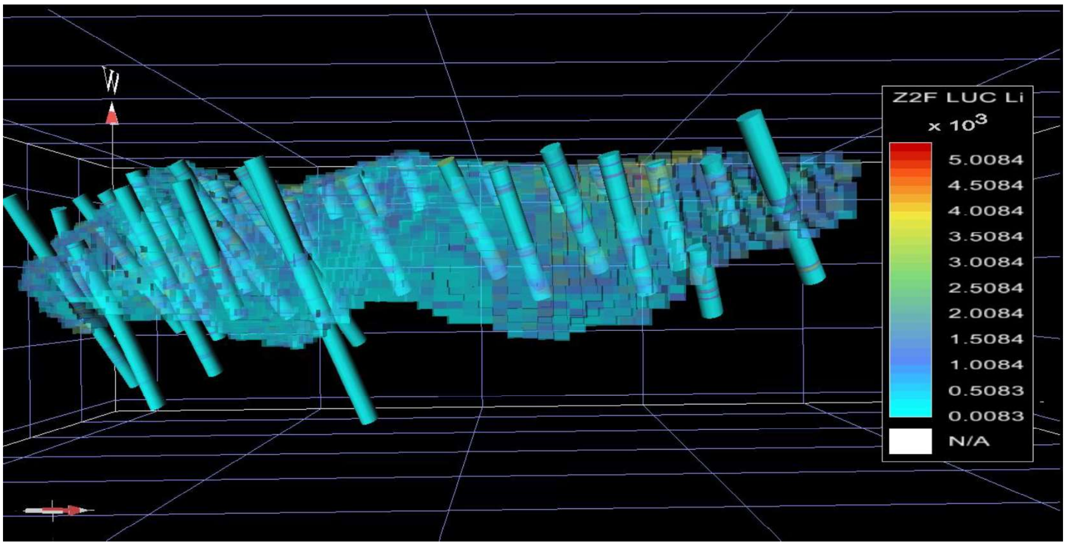


Figure 31: View looking west of LMUC estimates

In addition to the validation steps already mentioned, swath plots were generated along the three axes and the long (Y) axis graph is presented in Figure 32.

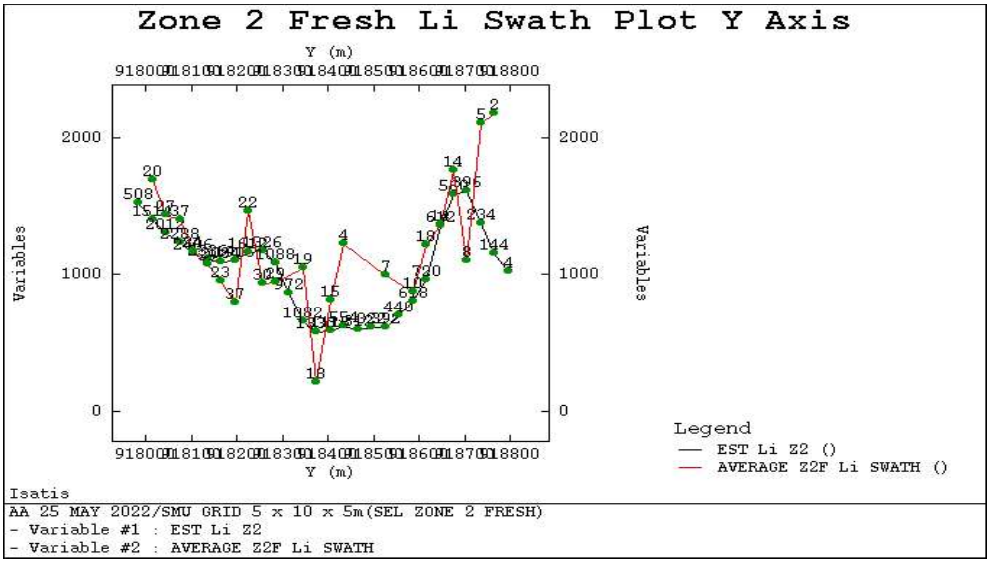
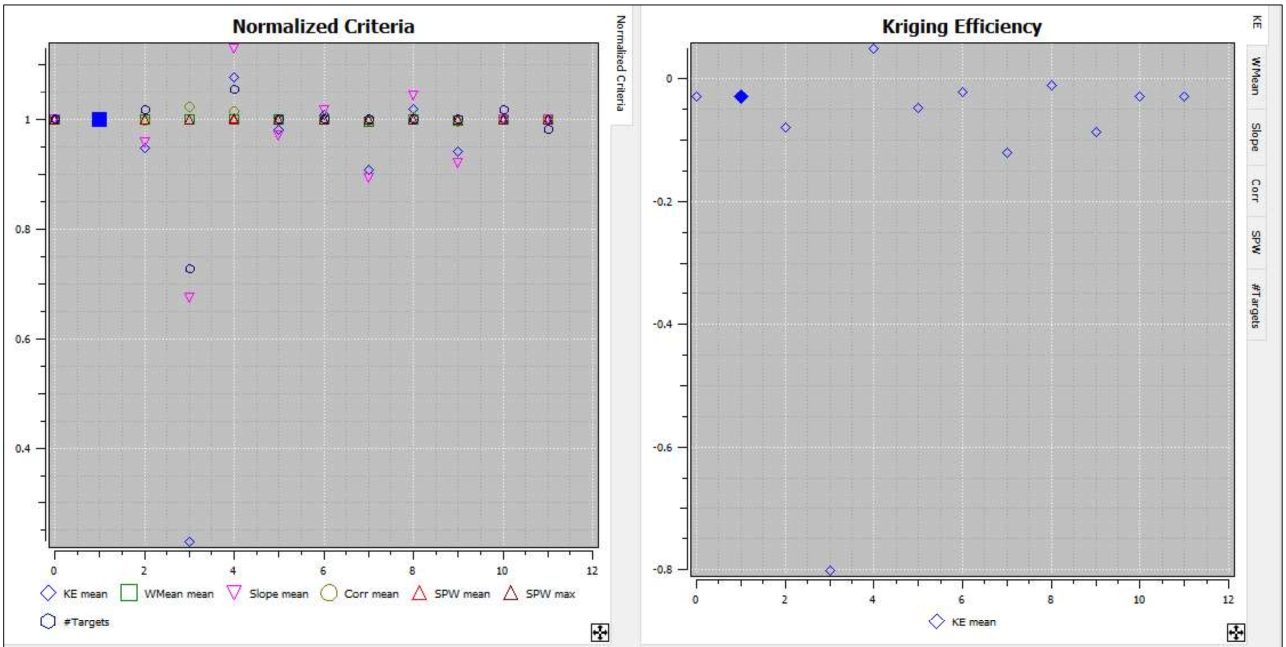


Figure 32: Zone 2 Fresh validation of estimates vs 1 m composite grades

8.5.2 Zone 2 Oxide plus Transition Domains

Estimates in the combined Oxide and Transition domains are significantly less robust than the estimates are in the Fresh domain with very high weight of the mean in all cases tested, and relatively low SOR numbers. These differences are a function of the Zone 2 Fresh domain having much better defined variogram structures and model than Zone 2 Oxide and Transition domain.



Results table

Variable of Interest: Li_ppm

Show Varying Neighborhood Parameters columns · Show Criteria Columns

ID	Active	EllRot	EllFac	#Sect	#Opt/Sect	Split	#Min	KE mean	Slope mean	WMean mean	Corr mean	SPW mean	SPW max	#Targets
0	☑	[60.0°/OZ, 0.0°/OY, 20.0°/OX]	1.00	8.00	20.00	yes	8.00	-0.0293	0.4241	0.7395	0.3103	1.0000	1.0000	55.00
1	☑	[60.0°/OZ, 0.0°/OY, 20.0°/OX]	1.00	8.00	20.00	yes	8.00	-0.0293	0.4241	0.7395	0.3103	1.0000	1.0000	55.00
2	☑	[120.0°/OZ]	1.00	8.00	20.00	yes	8.00	-0.0801	0.4063	0.7393	0.3100	1.0000	1.0000	56.00
3	☑	[60.0°/OZ, 0.0°/OY, 20.0°/OX]	0.50	8.00	20.00	yes	8.00	-0.8015	0.2864	0.7391	0.3179	1.0000	1.0000	40.00
4	☑	[60.0°/OZ, 0.0°/OY, 20.0°/OX]	1.50	8.00	20.00	yes	8.00	0.0490	0.4793	0.7396	0.3148	1.0001	1.0022	58.00
5	☑	[60.0°/OZ, 0.0°/OY, 20.0°/OX]	1.00	4.00	20.00	yes	8.00	-0.0484	0.4122	0.7394	0.3096	1.0000	1.0000	55.00

Figure 33: Neighbourhood analyses tests and criteria for Zone 2 Oxide and Transition domains combined

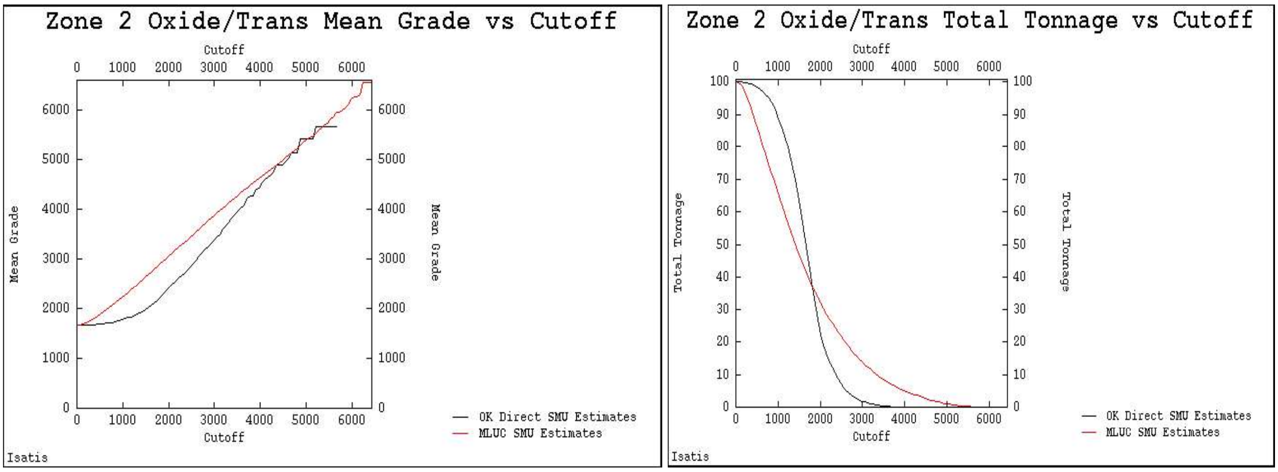


Figure 34: Zone 2 Oxide/Transition trade and tonnage curves for Li

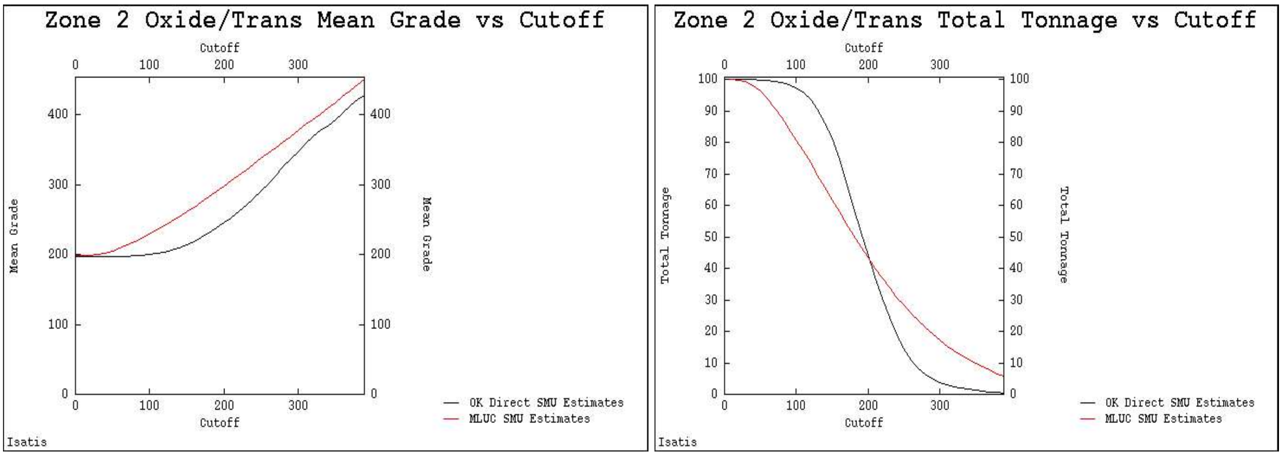


Figure 35: Zone 2 Oxide/Transition grade and tonnage curves for Sn

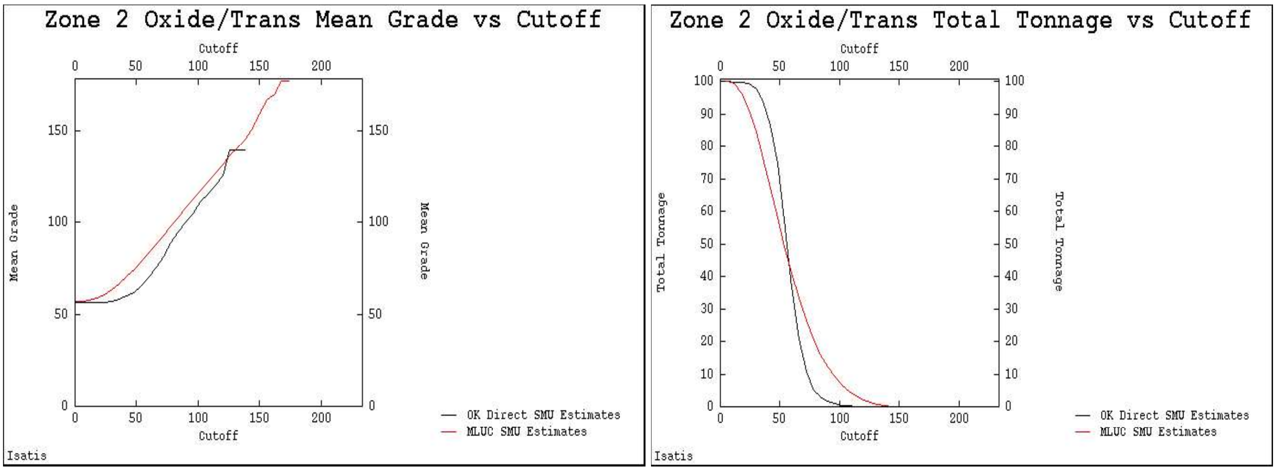


Figure 36: Zone 2 Oxide/Transition grade and tonnage curves for Ta

Figure 34 to Figure 36 present the grade-tonnage curves for Zone 2 combined oxide and transition ores. Significant smoothing is evident for all elements but especially for lithium and tin. The next two figures (Figure 37 and Figure 38) refer to lithium estimates and illustrate the smoothing with the first figure showing the SMU estimates (refer to the colour legend) and the second figure, using the same legend, showing greater grade variability. Nevertheless, as can be seen in Table 27, the mean grade has been well reproduced by both methods, direct OK estimates and LMUC estimates, compared to the 1 m composite averages.

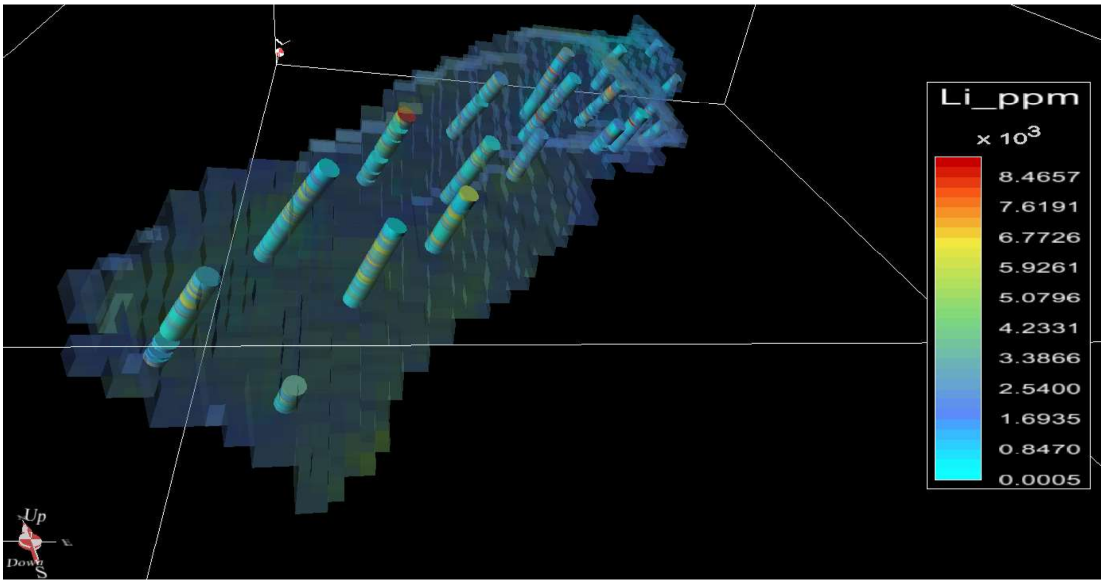


Figure 37: Directly estimated SMUs showing the smoothing of Li grades

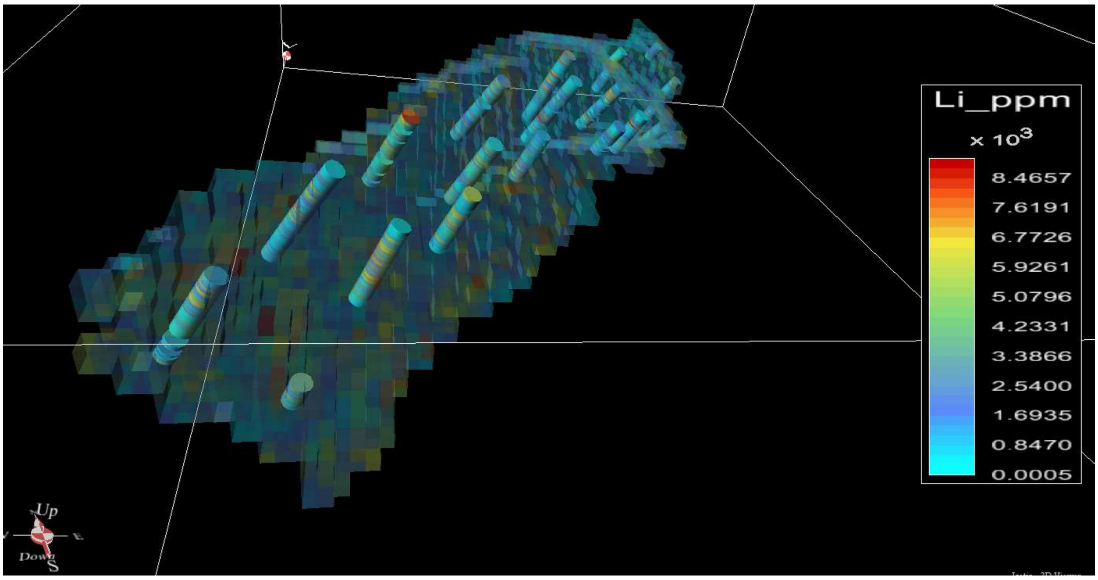


Figure 38: SMU estimates by LMUC of Li grades

Table 27: Zone 2 Oxides and Transition comparative estimates for LMUC, direct SMU estimates and 1 m composite grades

Zone 2 Oxide/Trans	Count	LMUC estimates				Direct SMU estimates				1 m Composites	
Variable		Min.	Max.	Mean	Variance	Min.	Max.	Mean	Variance	Count	Mean
EST Li	9,166	47	6550	1674	1338658	131	5668	1672	313568	741	1684
EST Sn	9,166	16	669	199	11428	40	588	197	3121	741	200
EST Ta	9,166	6.8	177	57	719	8.6	39	56	187	741	57

Table 28: Zone 2 Oxides and Transition comparative statistics for direct SMU estimates and 1 m composite grades

Zone 2 Oxide/Trans	Direct SMU estimates				1 m Composites	
Variable	Count	Minimum	Maximum	Mean	Count	Mean
Cs	9,166	6.7	883	237	741	239
Rb	9,166	72	4597	1341	741	1351

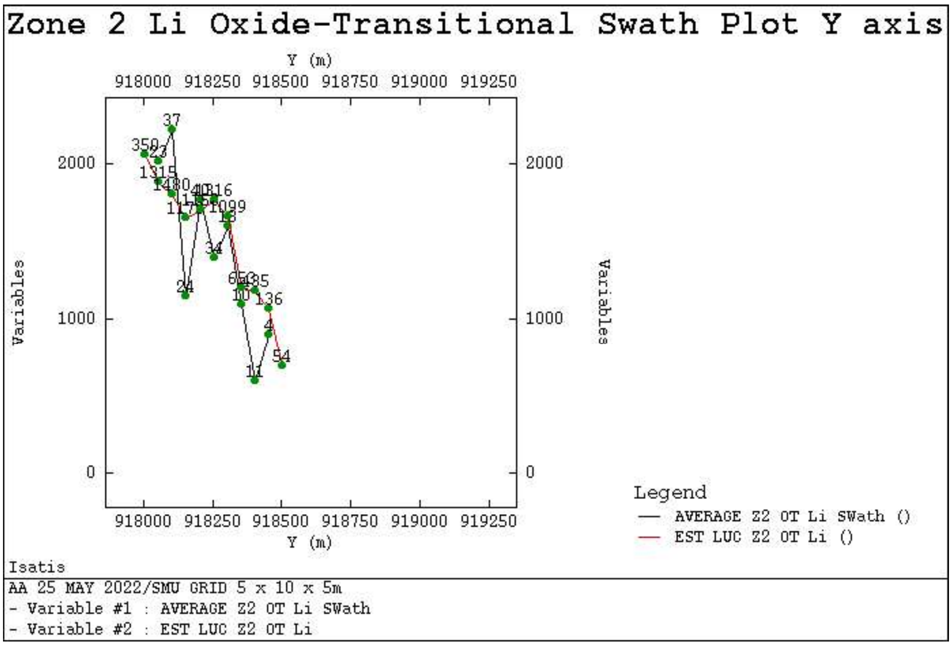


Figure 39: Zone 2 Oxide-Transition validation of estimates vs 1 m composite grades

8.6 Ordinary Kriging and the Discrete Gaussian Model for Change of Support

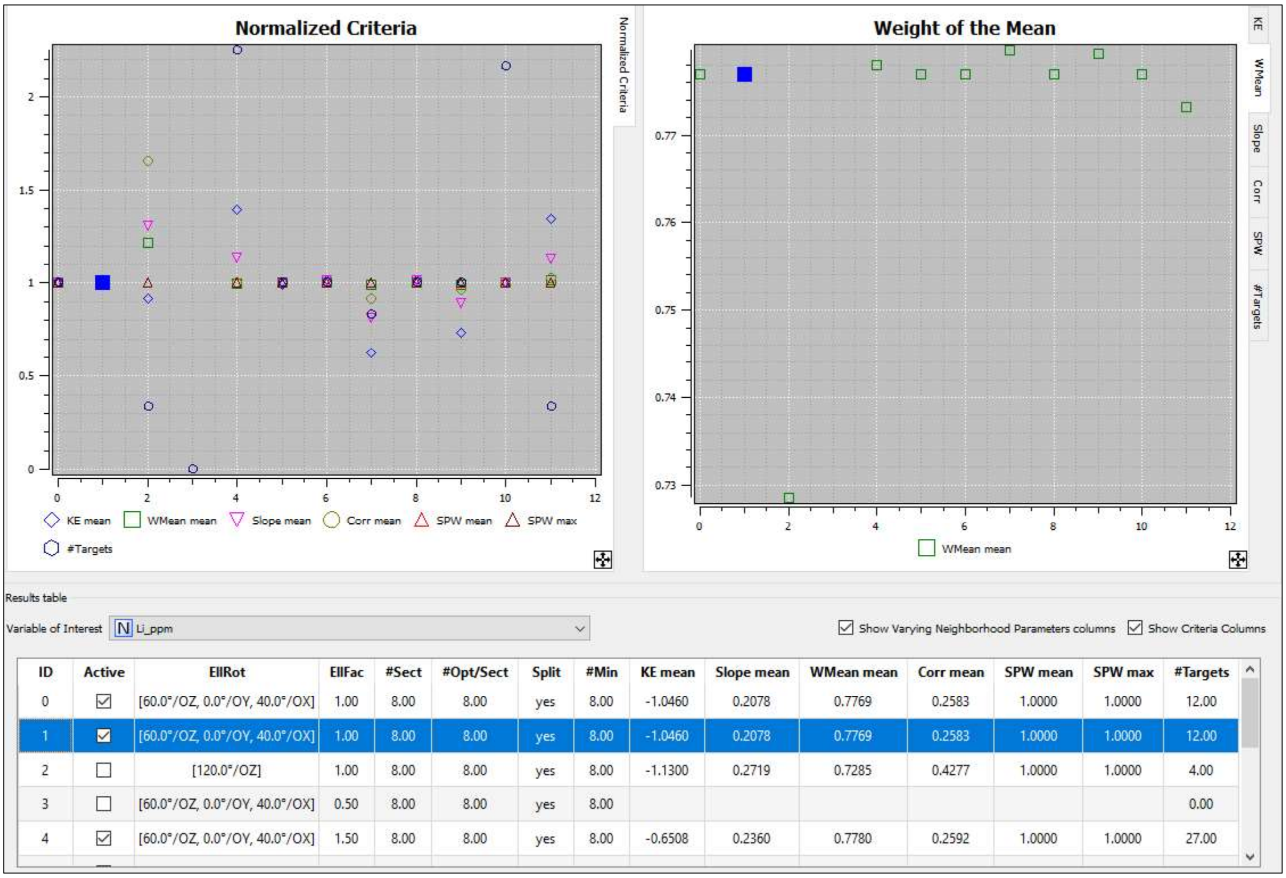
While it had been intended to undertake LMUC on all the mineralised domains, the low confidence in the variogram models necessitated a change in plans and OK was carried out on the SMUs for Zone 1 All domains combined and Zone 3 Fresh domain. To limit the smoothing, the DGM change of support was run to evaluate the smoothing and to define the estimation neighbourhood that would provide acceptable results.

For global recoverable resources which have been estimated by non-linear methods such as the DGM, the objective is to provide tonnes and average grades above specified cut-offs. At zero cut-off grade the average grade can be checked against the mean of the de-clustered input data or against the mean grade of the linear estimated models. This is in fact a very important step because the DGM will better reflect the average de-clustered grade, because it is less affected by the extreme grades than linear models are, provided that the anamorphosis function is well modelled. The DGM may be used to assess the amount of smoothing imparted by linear estimation and, if judiciously used, may assist with the selection of the estimation neighbourhood.

The process can be explained as follows:

1) Compute the theoretical dispersion variance (D^2); this is either the Block dispersion variance (linear estimate) or the Panel dispersion variance (non-linear estimate) by using the modelled variogram and computing the change of support for each of the parent cell sizes
2) Compute the theoretical grade-tonnage curves using the Hermite polynomials and using the calculated D2 values.
3) Compute the experimental grade-tonnage curves from the parent cells of the block models (SMU).
4) Compare the two grade-tonnage histograms and assess the amount of smoothing imparted to the linear estimated block model.
5) If the amount of smoothing is of concern, "tweak" the estimation neighbourhood parameters, always being aware not to bias the estimate, until the two grade-tonnage curves have similar shapes, where possible.

Although most of the kriging criteria, including SOR and weight of the mean, reflect poor values (Figure 40), the estimates are not excessively smoothed as presented in **Error! Reference source not found.** and Figure 41.



ID	Active	EllRot	EllFac	#Sect	#Opt/Sect	Split	#Min	KE mean	Slope mean	WMean mean	Corr mean	SPW mean	SPW max	#Targets
0	☑	[60.0°/OZ, 0.0°/OY, 40.0°/OX]	1.00	8.00	8.00	yes	8.00	-1.0460	0.2078	0.7769	0.2583	1.0000	1.0000	12.00
1	☑	[60.0°/OZ, 0.0°/OY, 40.0°/OX]	1.00	8.00	8.00	yes	8.00	-1.0460	0.2078	0.7769	0.2583	1.0000	1.0000	12.00
2	☐	[120.0°/OZ]	1.00	8.00	8.00	yes	8.00	-1.1300	0.2719	0.7285	0.4277	1.0000	1.0000	4.00
3	☐	[60.0°/OZ, 0.0°/OY, 40.0°/OX]	0.50	8.00	8.00	yes	8.00							0.00
4	☑	[60.0°/OZ, 0.0°/OY, 40.0°/OX]	1.50	8.00	8.00	yes	8.00	-0.6508	0.2360	0.7780	0.2592	1.0000	1.0000	27.00

Figure 40: Neighbourhood analyses tests and criteria for Zone 1 all domains combined

Figure 41 and Figure 42 display the grade-tonnage curves for lithium and tantalum for the direct SMU estimates and the DGM change of support models. While there is evidence of smoothing for both variables, lithium and tantalum, given the paucity of data (187 composites) and the low confidence in the variogram models, the estimates are accepted as reasonable, but the Mineral Resource classification will reflect the uncertainty. The OK criteria in terms of the SOR and the weight of the mean, indicate that, locally, estimates will be inaccurate although the global mean estimated grades reconcile well with the 1 m composites (Table 29).

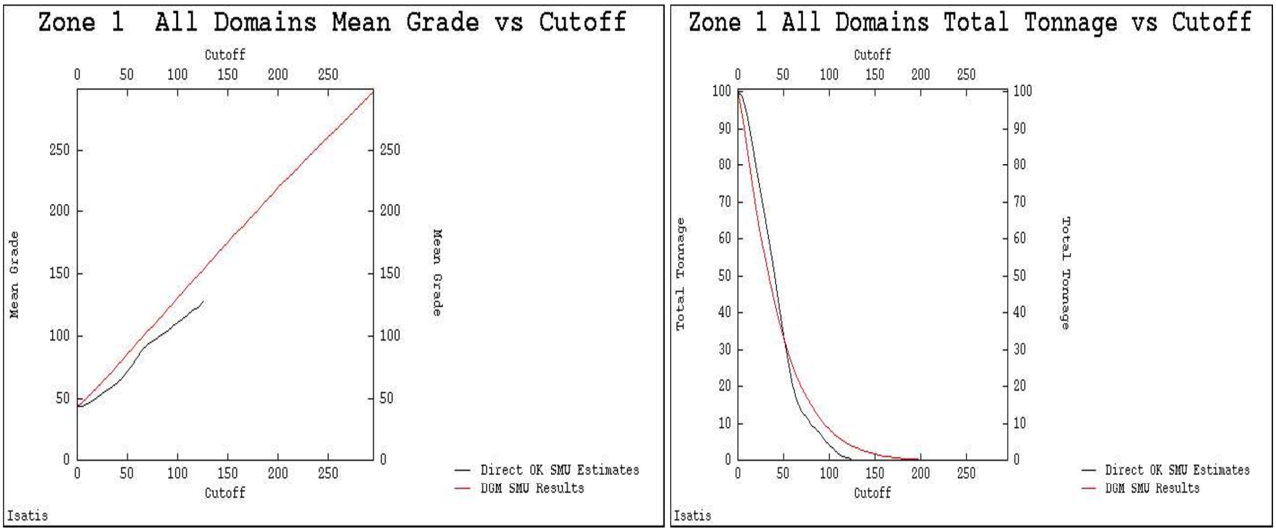


Figure 41: Zone 1 all domains grade and tonnage curves for Ta

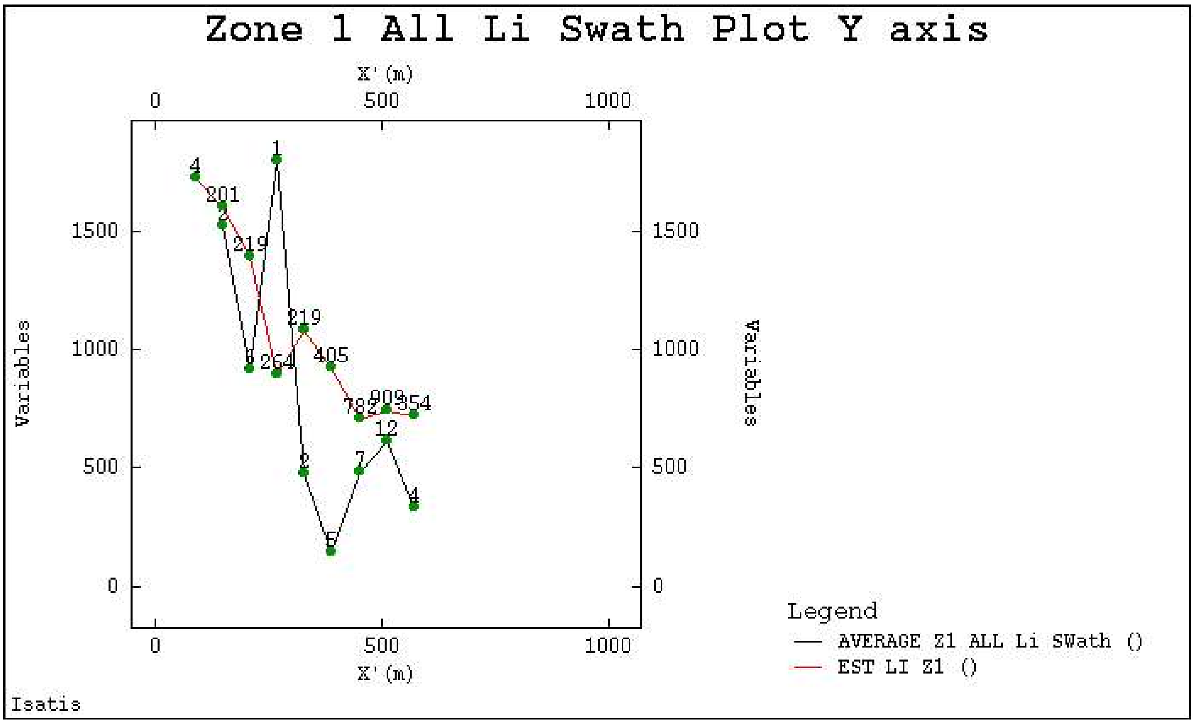


Figure 42: Validation by swath plot along Y axis

Table 29: Zone 1 all comparative estimates for direct SMU OK estimates and 1 m composite grades

Zone 1 All	Direct OK of SMUs					1 m Composites	
Variable	Count	Minimum	Maximum	Mean	Variance	Count	Mean
EST Z1 Li	3,252	18	2747	882	17647	187	908
EST Z1 Sn	3,252	12	447	142	4426	187	149
EST Z1 Ta	3,252	2	160	38	518	187	40
EST Z1 Cs	3,252	17	293	135	1843	187	135
EST Z1 Rb	3,252	84	2390	883	1843	187	918

8.6.1 Zone 3 Fresh Domain

Table 18 shows that the correlations between lithium and tin and tantalum are low and therefore there was no point in co-kriging the variables and each one was estimated separately using the neighbourhood parameters from lithium tests; this is so that all three variables were estimated in the same blocks. The estimates for caesium and rubidium which were undertaken later, made use of the lithium neighbourhood parameters.

Although Zone 3 comprises of only fresh ore, some of the grades distributional characteristics were quite complex. When undertaking the Gaussian anamorphosis, de-clustering is undertaken to remove any potential low-grade or high-grade biasing from clustered sampling and in certain cases it is not unusual to see changes between the raw and de-clustered means of ± 10% for any element and usually there is a plateau at which the mean and variance stay reasonably constant. De-clustering was undertaken using 10 grids which range from a minimum of 50 m x 50 m x 10 m to a maximum of 100 m x 100 m x 50 m and the results are presented in Figure 25 and Figure 43.

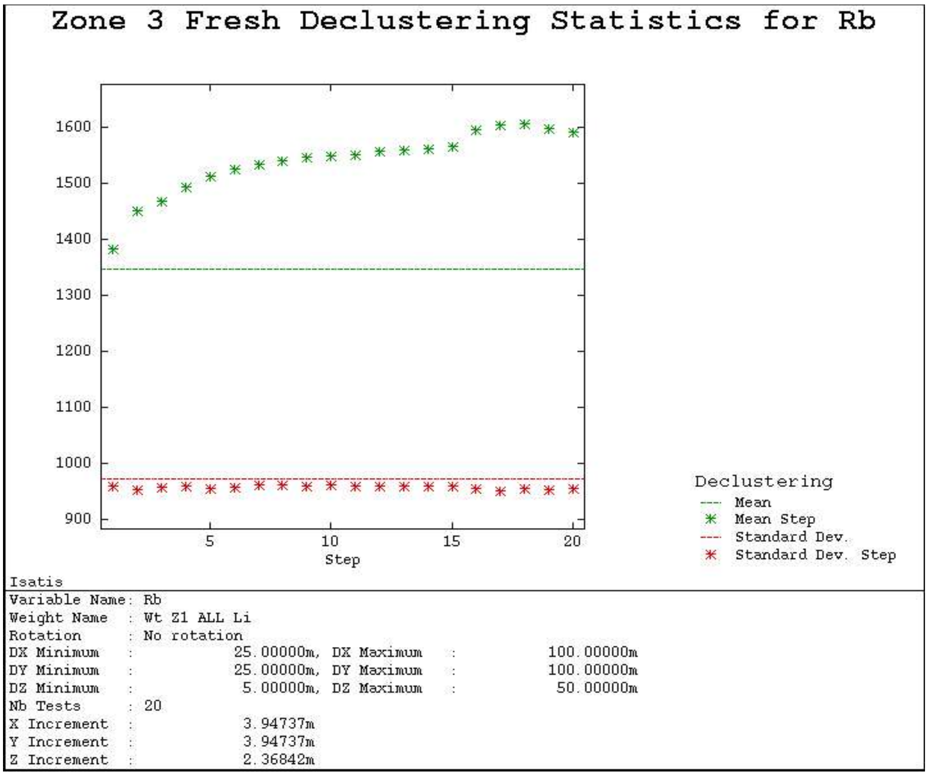


Figure 43: De-clustering statistics for Rb in Zone 3 Fresh

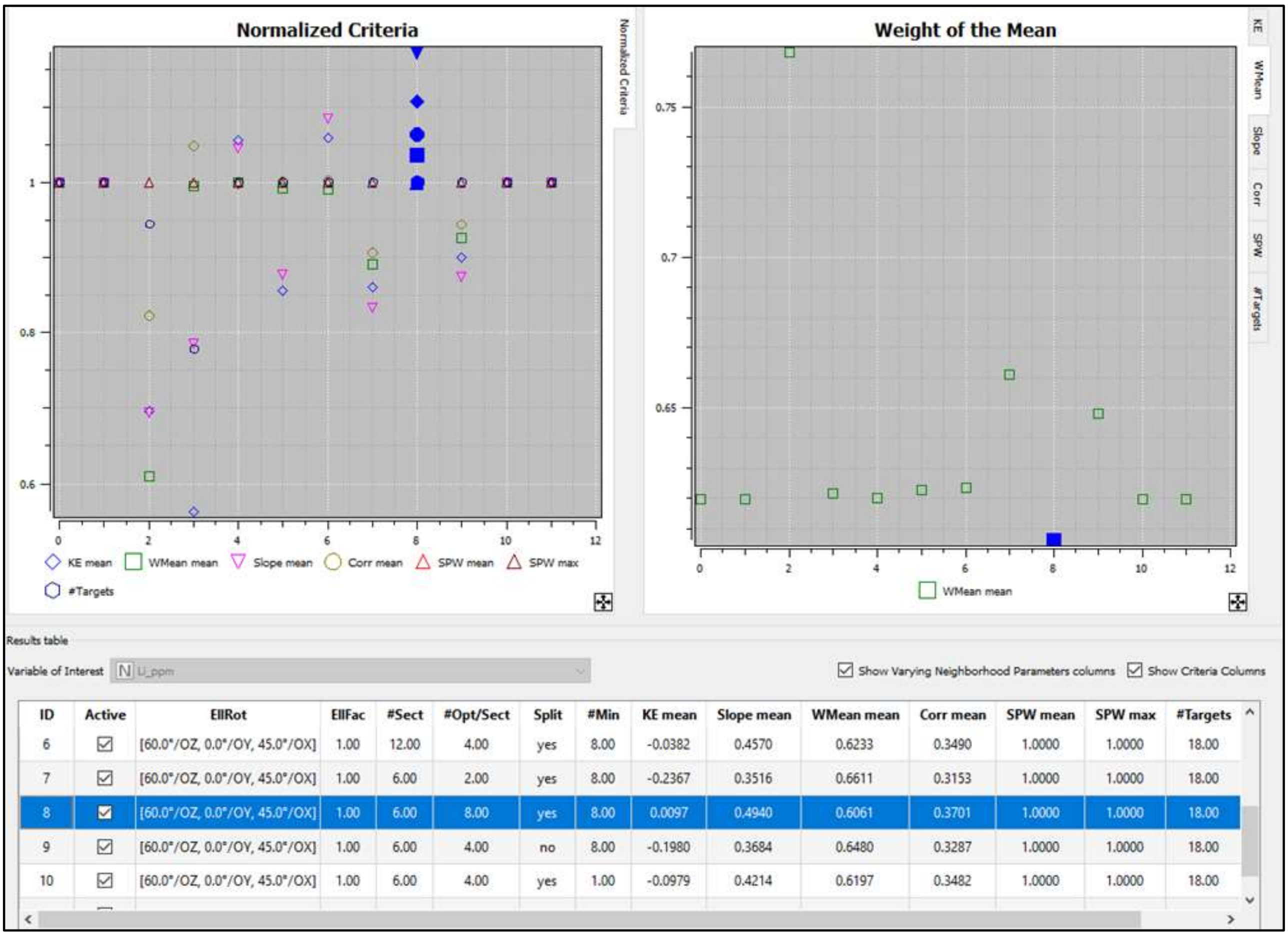
This behaviour is not fully understood, at this stage, but it is interesting to contrast the behaviour of lithium and tin, with that of tantalum where the mean grade meanders between about ± 3% (absolute) of the mean and the variance decreases as the de-clustering block size increases, which is understandable. Subsequently, rubidium was de-clustered and presented a different scenario in which the variance remained unchanged across all de-clustering block sizes tested but the mean increased systematically and hence the average of the estimated grades was substantially higher than the composite mean grade.

This behaviour will affect the estimates, and Table 30 shows relatively large differences for lithium, tin and rubidium compared to the 1 m composite means, whereas tantalum estimates reconcile well with the 1 m composite mean.

Table 30: Zone 3 Fresh comparative estimates for direct SMU OK estimates and 1 m composite grades

Zone 3 Fresh	Direct OK of SMUs					1 m Composites	
Variable	Count	Minimum	Maximum	Mean	Variance	Count	Mean
EST Z3 Li	3,252	70	1912	706	104178	200	612
EST Z3 Sn	3,252	51	2209	880	205198	200	831
EST Z3 Ta	3,252	4	130	57	536	200	58
EST Z3 Cs	3,252	14	180	102	460	200	95
EST Z3 Rb	3,252	166	2867	1446	177448	200	1346

Notwithstanding the anomalous behaviour presented by the de-clustering and the relatively poor kriging criteria presented in Figure 44, there is little smoothing evident between the grade-tonnage curves for the direct SMU estimates and those from the DGM, therefore the estimates are considered to be sufficiently robust for resource declaration, but CSA Global recommends further investigation into the behaviour of all elements in this zone.



ID	Active	EllRot	EllFac	#Sect	#Opt/Sect	Split	#Min	KE mean	Slope mean	WMean mean	Corr mean	SPW mean	SPW max	#Targets
6	☑	[60.0°/OZ, 0.0°/OY, 45.0°/OX]	1.00	12.00	4.00	yes	8.00	-0.0382	0.4570	0.6233	0.3490	1.0000	1.0000	18.00
7	☑	[60.0°/OZ, 0.0°/OY, 45.0°/OX]	1.00	6.00	2.00	yes	8.00	-0.2367	0.3516	0.6611	0.3153	1.0000	1.0000	18.00
8	☑	[60.0°/OZ, 0.0°/OY, 45.0°/OX]	1.00	6.00	8.00	yes	8.00	0.0097	0.4940	0.6061	0.3701	1.0000	1.0000	18.00
9	☑	[60.0°/OZ, 0.0°/OY, 45.0°/OX]	1.00	6.00	4.00	no	8.00	-0.1980	0.3684	0.6480	0.3287	1.0000	1.0000	18.00
10	☑	[60.0°/OZ, 0.0°/OY, 45.0°/OX]	1.00	6.00	4.00	yes	1.00	-0.0979	0.4214	0.6197	0.3482	1.0000	1.0000	18.00

Figure 44: Neighbourhood analyses tests and criteria for Zone 3 Fresh domain combined

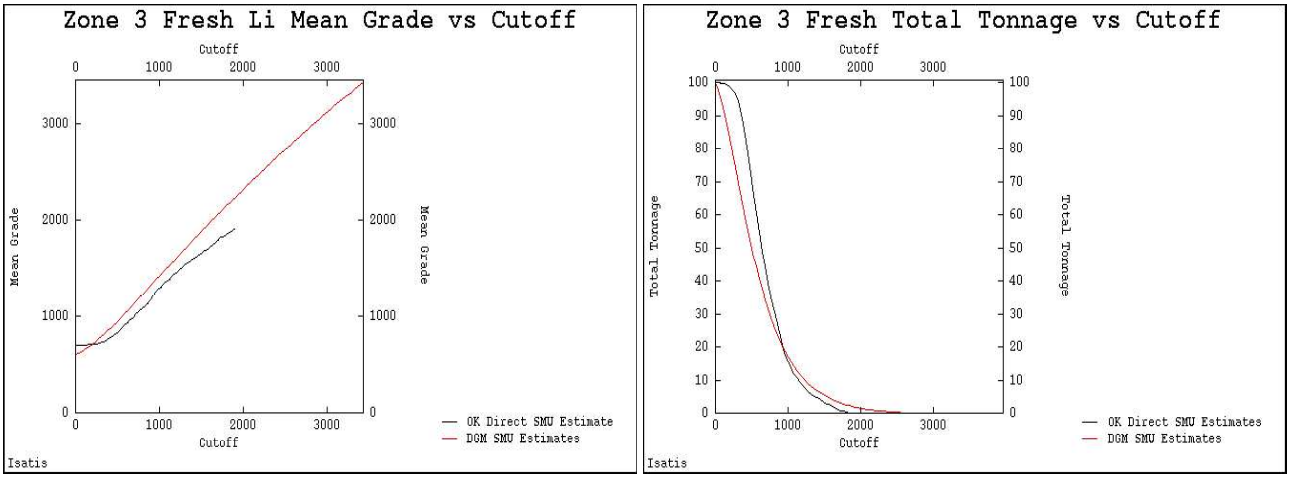
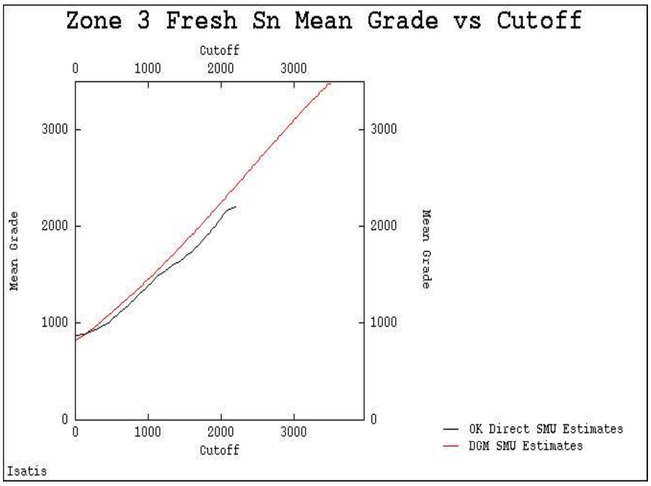


Figure 45: Zone 3 Fresh domain grade and tonnage curves for Li



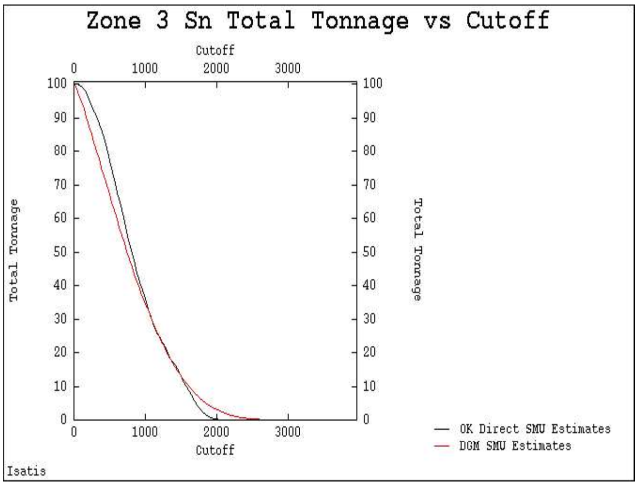


Figure 46: Zone 3 Fresh domain grade and tonnage curves for Sn

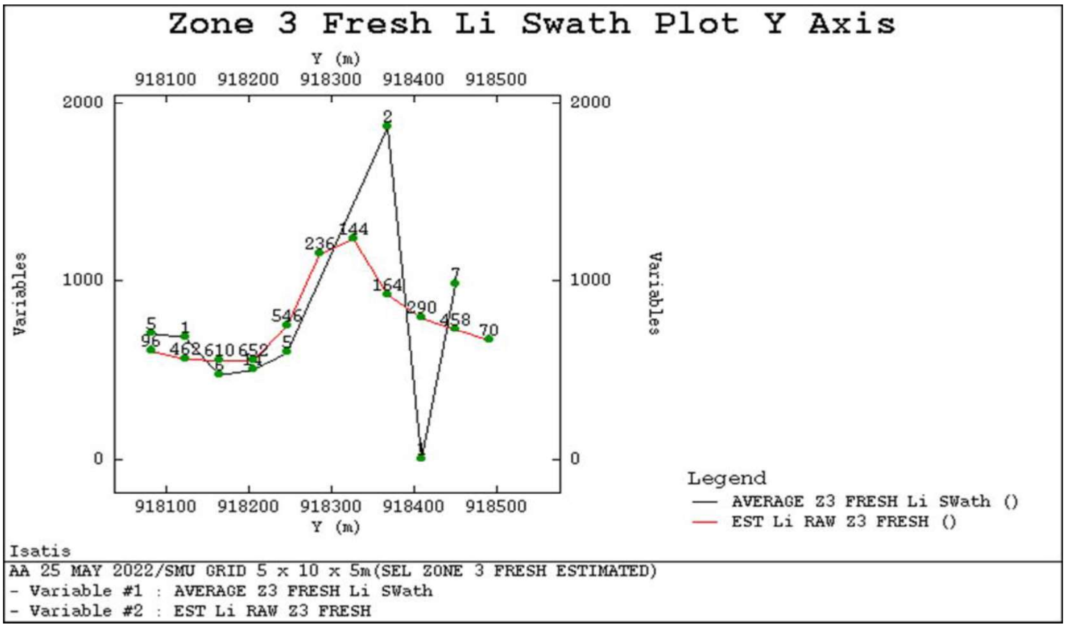
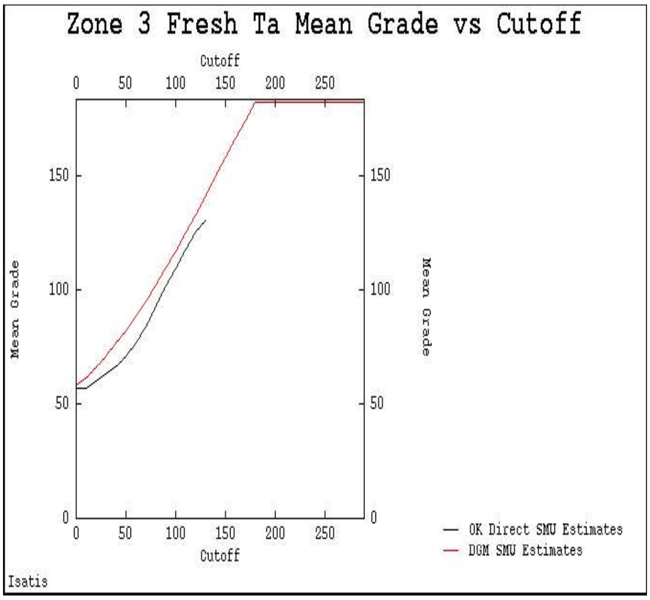


Figure 47: Zone 3 Fresh validation of estimates vs 1 m composite grades



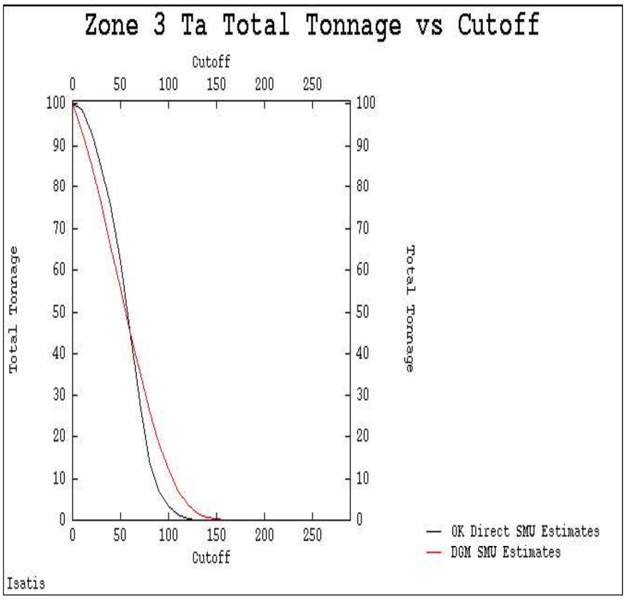


Figure 48: Zone 3 Fresh domain grade and tonnage curves for Ta

9 Density

Density samples were collected from full and half core over intervals ranging from 2 cm to 118 cm, averaging 17 cm. A total of 53 samples were measured accounting for a wax coating using the following formula:

waxed SG = weight in air / ((wax-weight in air – wax-weight in water) - (wax-weight in air - weight in air/0.9)

The remaining 464 samples were measured using the Archimedes principal SG = weight in air / (weight in air - weight in water).

All measurements were collected from the mineralised area in Zone 2. The SGs in Zone 2 Fresh were estimated by OK and Zone 2 Oxide and Transition ores were assigned the average grades shown in Table 31. The estimated average SG for Zone 2 Fresh is 2.68 t/m^3.

Table 31: SG measurements collected in Zone 2 across the three weathered profiles

Variable	Count	Minimum	Maximum	Mean	Standard deviation
SG Oxide	40	1.40	2.72	2.01	0.30
SG Transition	9	1.94	2.73	2.42	0.31
SG Fresh	468	1.92	2.80	2.67	0.96

Zone 1 and Zone 3 were assigned the average of the Zone 2 samples based on the weathering domain.

10 Metallurgy

PAM aims to mine lepidolite bearing ore to produce a lepidolite concentrate via flotation, and then to process that concentrate into lithium chemicals, being one or more of lithium carbonate (Li_2CO_3), lithium hydroxide (LiOH), and lithium phosphate (Li_3PO_4). There is also potential for a suite of by-products depending upon the treatment methods ultimately employed. At the concentrator end there is potential to produce tin and tantalum concentrates as well as quartz/feldspar sand, clay products and waste rock. At the chemical processing plant the by-products may include potash, gypsum, rubidium/caesium salts and an amorphous silica product.

Previous PAM work conducted on weathered pegmatite from mostly trench and some rock-chip samples, showed +93.3% Li recovery to flotation rougher concentrate, grading about 2.76% Li_2O.

In new and current work, preliminary results at this stage indicate lithium recoveries in oxide material are ~65% and >80% to 85% in fresh rock.

Mineralogical and liberation analysis indicates the lepidolite is typically fine-medium grained with 95% liberation achieved at a grind size of 80% p150 microns and is thus "available" for physical recovery.

The flotation testwork is ongoing and is yet to be optimised. However, it is a reasonable expectation that 70% to 80% of the lepidolite can be recovered to a concentrate grading between 3% Li_2O and 4% Li_2O over the life of the Project.

Rubidium and caesium will report to the lepidolite concentrate and are potentially recoverable as well as potassium and calcium sulphate by-products.

Tin and tantalum recovery testwork is yet to be undertaken. However, it is a reasonable expectation that minerals containing tin (cassiterite) and tin-niobium minerals (tantalite-microlite) can be recovered to concentrates via simple gravity methods, and then potentially further upgraded/separated by magnetic methods. It is also the case that these minerals were recovered when the Reung Kiet mine was active in the late-1960s to early 1970s when the weathered pegmatite material was extracted.

PAM is continuing flotation testwork and will also conduct tin-tantalum recovery testwork.

11 Mineral Resource Reporting

11.1 Reasonable Prospects for Eventual Economic Extraction

Clause 20 of the JORC Code (2012) requires that all reports of Mineral Resources must have reasonable prospects for eventual economic extraction, regardless of the classification of the Mineral Resource.

The Competent Persons deem that there are reasonable prospects for eventual economic extraction of mineralisation on the following basis:

- PAM has the aim to mine lepidolite-bearing ore to produce a lepidolite concentrate via flotation, and then to process the concentrate into lithium chemicals, being one or more of Li_2CO_3, LiOH, and Li_3PO_4. There is also potential for a suite of by-products depending upon the treatment methods ultimately employed. At the concentrator end there is potential to produce tin and tantalum concentrates as well as quartz/feldspar sand, clay products and waste rock. At the chemical processing plant the by-products may include potash, gypsum, rubidium/caesium salts and an amorphous silica product. PAM believes it is in a unique position to achieve these goals.
- Previous PAM work conducted on weathered pegmatite from mostly trench and some rock-chip samples, showed +90% Li recovery to flotation rougher concentrate, grading about 2.76% Li_2O. In new and current work preliminary results at this stage indicate lithium recoveries in oxide material are around 65% and >80% in fresh rock. The flotation testwork is ongoing and is yet to be optimised. However, it is a reasonable expectation that 70–80% of the lepidolite can be recovered to a concentrate grading between 3% Li_2O and 4% Li_2O over the life of the Project.
- Assuming a mining rate of between 1.0 Mtpa and 1.5 Mtpa, a head grade of 0.45% Li_2O, which is equivalent to 1.11% lithium carbonate equivalent (LCE), and recoveries of 65%, PAM has benchmarked mining costs, and metallurgical processing recoveries and costs, and has shown that there are reasonable prospects for eventual economic extraction.
- Operating costs in Thailand are globally competitive. Fuel, electricity, and labour costs in Thailand are at least half compared to Australia.

11.2 Mineral Resource Classification

The Mineral Resource has been classified in accordance with guidelines contained in the JORC Code. The classification applied reflects the authors views of the uncertainty attributed to the Mineral Resources reported herein. Key criteria that have been considered when classifying the Mineral Resource are detailed in JORC Table 1 which is contained in Appendix A.

After considering data quality, data distribution, and geological and grade continuity, the Reung Kiet MRE was wholly classified as an Inferred Mineral Resource for the following reasons:

- Sampling QAQC is lacking in detail and specifically the absence of reliable standard reference materials (SRMs) and/or CRMs is not up to good industry standards. SRMs were collected from trenches and comprise only of weathered materials.
- SGs have not been collected from Zones 1 or 3 and averages from Zone 2 were applied across oxidised, transition and fresh ores.

11.3 Mineral Resource Reporting

Global Mineral Resources at zero cut-off and at a 0.25% Li_2O cut-off are tabled below for oxides and transition (Table 32), and fresh ore (Table 33). Included in Table 34 and Table 35 are the tonnes and grades for a range of Li_2O cut-offs for all elements estimated.

Table 32: Global Oxide and Transition Inferred Mineral Resources and at a 0.25% Li_2O cut-off

Cut-off (Li_2O)	Oxide and Transition	Lithium			Tin		Tantalum		Caesium		Rubidium	
	Total tonnes	Metal tonnes	Mean Li ppm	Mean Li_2O%	Metal tonnes	Mean Sn ppm	Metal tonnes	Mean Ta_2O_5 ppm	Metal tonnes	Mean Cs ppm	Metal tonnes	Mean Rb ppm
0	5,500,000	8,761	1,589	0.342	1,062	193	376	68	1,243	225	7,150	1,297
0.25	3,200,000	7,140	2,265	0.488	807	256	277	88	769	244	4,659	1,478

Table 33: Global Fresh Inferred Mineral Resources and at a 0.25% Li_2O cut-off

Cut-off (Li_2O)	Fresh Ore	Lithium			Tin		Tantalum		Caesium		Rubidium	
	Total tonnes	Metal tonnes	Mean Li ppm	Mean Li_2O%	Metal tonnes	Mean Sn ppm	Metal tonnes	Mean Ta_2O_5 ppm	Metal tonnes	Mean Cs ppm	Metal tonnes	Mean Rb ppm
0	23,000,000	23,007	1,000	0.215	7,674	334	1,169	51	3,340	145	26,291	1,143
0.25	7,200,000	14,037	1,946	0.419	3,114	432	624	87	1,405	195	11,197	1,552

Table 34: Oxide and Transition Ore grade-tonnage table for a range of cut-offs

Cut-off (Li_2O)	Oxide and Transition	Lithium			Tin		Tantalum		Caesium		Rubidium	
	Total tonnes	Metal tonnes	Mean Li ppm	Mean Li_2O%	Metal tonnes	Mean Sn ppm	Metal tonnes	Mean Ta_2O_5 ppm	Metal tonnes	Mean Cs ppm	Metal tonnes	Mean Rb ppm
0	5,513,750	8,761	1,589	0.342	1,062	193	376	68	1,243	225	7,150	1,297
0.1	4,891,780	8,571	1,752	0.377	1,023	209	359	73	1,122	229	6,570	1,343
0.15	4,338,540	8,247	1,901	0.409	969	223	338	78	1,012	233	6,010	1,385
0.2	3,770,350	7,785	2,065	0.445	898	238	311	82	896	238	5,381	1,427
0.25	3,151,850	7,140	2,265	0.488	807	256	277	88	769	244	4,659	1,478
0.3	2,604,950	6,443	2,473	0.533	713	274	242	93	652	250	3,975	1,526
0.35	2,086,130	5,658	2,712	0.584	613	294	205	98	542	260	3,300	1,582
0.4	1,698,180	4,982	2,934	0.632	529	312	176	104	453	267	2,754	1,622
0.45	1,414,460	4,423	3,127	0.673	463	328	153	108	384	271	2,352	1,663
0.5	1,163,130	3,869	3,327	0.716	400	344	131	113	320	275	1,975	1,698

Table 35: Fresh Ore grade-tonnage table for a range of cut-offs

Cut-off (Li_2O)	Fresh Ore	Lithium			Tin		Tantalum		Caesium		Rubidium	
	Total tonnes	Metal tonnes	Mean Li ppm	Mean Li_2O	Metal tonnes	Mean Sn ppm	Metal tonnes	Mean Ta_2O_5	Metal tonnes	Mean Cs ppm	Metal tonnes	Mean Rb ppm
0	23,007,400	23,007	1,000	0.2153	7,674	334	1,169	51	3,340	145	26,291	1,143
0.1	16,575,100	21,276	1,284	0.2764	6,451	389	1,053	64	2,717	164	21,583	1,302
0.15	12,781,200	19,075	1,492	0.3213	5,003	391	902	71	2,231	175	17,665	1,382
0.2	9,531,000	16,444	1,725	0.3715	3,890	408	749	79	1,772	186	13,993	1,468
0.25	7,214,340	14,037	1,946	0.4189	3,114	432	624	87	1,405	195	11,197	1,552
0.3	5,556,320	11,927	2,147	0.4622	2,521	454	520	94	1,123	202	9,022	1,624
0.35	4,209,430	9,902	2,352	0.5065	2,022	480	425	101	879	209	7,131	1,694
0.4	3,183,280	8,122	2,551	0.5493	1,608	505	344	108	683	215	5,576	1,752
0.45	2,369,890	6,522	2,752	0.5925	1,263	533	273	115	521	220	4,290	1,810
0.5	1,737,880	5,131	2,952	0.6356	985	567	213	122	390	224	3,261	1,876

12 Conclusions and Recommendations

12.1 Conclusions

CSA Global considers that, while data collection techniques are largely consistent with accepted industry practices, there are insufficient checks on sampling and assaying QAQC, and a dearth of density data in areas of the Mineral Resources. QAQC data were received for review after the MRE had been completed. Nevertheless, CSA Global is satisfied to report an Inferred Mineral Resource for the Reung Kiet lithium deposit.

The Competent Person is of the opinion that the understanding of the Project's geology is sufficient at this stage of exploration. More work needs to be done to explain the mineralisation in the siltstones adjacent to the pegmatites.

It is reasonable to expect that at a 0.25% Li_2O cut-off grade, an average head grade of 0.45% Li_2O can be achieved over the life of mine.

PAM has the aim to mine lepidolite-bearing ore to produce a lepidolite concentrate via flotation, and then to process the concentrate into lithium chemicals, being one or more of Li_2CO_3, LiOH, and Li_3PO_4. There is also potential for a suite of by-products depending upon the treatment methods ultimately employed. The flotation testwork is ongoing and is yet to be optimised. However, it is a reasonable expectation that 70–80% of the lepidolite can be recovered to a concentrate grading between 3% Li_2O and 4% Li_2O over the life of the Project.

Assuming a mining rate of between 1.0 Mtpa and 1.5 Mtpa, a head grade of 0.45% Li_2O, which is equivalent to 1.11% LCE, and recoveries of 65%, PAM has benchmarked mining costs, and metallurgical processing recoveries and costs, and has shown that there are reasonable prospects for eventual economic extraction.

Generally, variography is poor to moderately robust with the down-dip component showing the poorest structures, the result of insufficient drillholes in that direction. At this stage, only portions of Zone 2 would potentially be at a higher classification than "Inferred", once sampling and assaying QAQC shortcomings have been addressed.

Direct estimation of SMU sized blocks results in smoothing which ranges between minimal and significant and the use of a recoverable resources method, such as LUC, adds benefit to this selective mining operation.

12.2 Recommendations

1) The lithology logging should not include gaps but form a continuous sequence of records as observed in the drill core. Sampling of intervals within the broad mineralisation envelope is not essential but unless pegmatite dykes and vein swarms are modelled individually and exclude low grade or unmineralised siltstone, internal low grade or unmineralised siltstone intervals must be included in the broad mineralisation envelope. While these intervals may be in background siltstone lithology, they will be used in the MRE, and the siltstone has been found to occasionally carry some elevated lithium grades.
2) The use of an industry standard database system to collect and store the drilling information is recommended. This will reduce transcription errors and help secure the data for the Project.
3) CSA Global recommends that PAM uses commercially CRM for quality control checks. Any analytical issues with the primary laboratory can be picked up promptly and rectified.
4) In addition to extensional drilling along strike and down-dip, down-dip infill drilling should be undertaken as in this direction variography, and a general understanding of the grade distribution is compromised by a lack of data.
5) Establish written procedures for capturing and validating/visualising drillhole information, including logging and sampling and assaying QAQC, and keep them up to date.

6) Although the controls to the mineralisation are relatively well understood, continued development of the geological model is recommended to support future Mineral Resource estimation.
7) Purchase commercially available CRMs or prepare SRMs from weathered through to fresh materials.
8) Assay the coarse blank material before use to confirm that elements of interest are undetectable.
9) Analyse the field duplicate data for tin, tantalum, rubidium and caesium to make a complete package.
10) Re-assay the pulps for the samples analysed by XRF method using the industry standard method.
11) Select some pulps and send them to an umpire laboratory for check assays.
12) Collect SG measurements in Zone 1 and Zone 3 and augment those in Zone 2 oxide and transition mineralisation.
13) While PAM used internal refence material for the quality control of the data, the reference material did not have certified expected results for lithium, tan, tantalum, rubidium, and caesium. The accuracy and performance of the laboratory could not be checked using the internal reference material. PAM is strongly encouraged to purchase commercially CRMs for future drilling programs.
14) The CRM results should be reviewed while the data are being collected so that corrective action can be taken if the laboratory is not performing to the expected standard. PAM is also encouraged to routinely select pulps and send them to an umpire laboratory for check assays as a way of verifying the primary laboratory performance and enhancing the confidence in the assay data.
15) Establishment of the mine geology system should be considered well in advance of mining. Systems to ensure development of the geological model, high-quality sampling, rapid capture and storage of data, quality control assessment, robust ore block interpretation, minimisation of ore loss and dilution, production tracking and reporting, and reconciliation should be established.
16) CSA Global supports the PAM forward plan for undertaking additional infill and extensional drilling at the deposit, in conjunction with carrying out mining and metallurgical studies to support potential mine development scenarios.

13 References

Garson M.S, Bradshaw N. and Rattawong S. 1969, Lepidolite Pegmatites in the Phangnga Area of Peninsular Thailand

Joint Ore Reserves Committee, 2012. *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition*. [online]. Available from http://www.jorc.org (The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists, and Minerals Council of Australia).

Optiro Pty Ltd, 2020, Pan Asia Metals Limited Independent Technical Assessment Report, Level 1, 16 Ord Street, Western Perth WA 6005.

Pan Asia Metals Limited,2022, 20220607_QA_QC RKLP assays etc for MRE_Pan Asia Metals

Vann, J., Jackson, S., and Bertoli, O. Quantitative Kriging Neighbourhood Analysis for the Mining Geologist - A Description of the Method with Worked Case Examples.

14 Abbreviations and Units of Measurement

°	degrees
°C	degrees Celsius
BOCO	base of complete oxidation
cm	centimetres
CRM	certified reference material
Cs	caesium
CSA Global	CSA Global Pty Ltd
DGM	Discrete Gaussian Model
DTM	digital terrain model
g	grams
GPS	global positioning system
ICP-AES	inductively coupled plasma atomic emission spectroscopy
ICP-MS	inductively coupled plasma mass spectrometry
IDW	inverse distance weighting
kg	kilograms
km	kilometres
LCE	lithium carbonate equivalent
LCT	lithium-caesium-tantalum
Li_2CO_3	lithium carbonate
Li_2O	lithium oxide
Li_3PO_4	lithium phosphate
LiOH	lithium hydroxide
LMUC	localised multivariate uniform conditioning
LUC	localised uniform conditioning
mm	millimetres
MPRD	mean paired relative difference
MRE	Mineral Resource estimation
Mtpa	million tonnes per annum
MW	megawatts
OK	ordinary kriging
PAM	Pan Asia Metals Limited
ppm	parts per million
QAQC	quality assurance/quality control
Rb	rubidium
RKLP	Reung Kiet Lithium Project
SG	specific gravity
SK	simple kriging

SMU	selective mining unit
Sn	tin
SOR	slope of regression
SPL	Special Prospecting Licence
SRM	standard reference material
t/m^3	tonnes per cubic metre
Ta	tantalum
TOFR	top of fresh rock
UC	uniform conditioning
XRD	x-ray diffraction
XRF	x-ray fluorescence

Appendix A JORC Table 1

Section 1: Sampling Techniques and Data

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 downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	Surface diamond drilling (DD) was used to collect samples within the immediate area of the Reung Kiet prospect. Drilling was carried out between April 2019 and March 2022. Approximately 80% of the core is HQ3 and 20% is NQ3 size. The Competent Person considers that the sampling techniques adopted are appropriate for the style of mineralisation.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Half HQ3 and NQ3 core samples were collected using a diamond saw. A knife and shovel were used split the saprolite material into half core samples. Sample intervals were based on logged mineralisation and geology. Sampling intervals range from 0.1 m to 2.4 m.
	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. "RC 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.	Half-core samples weighing between 2.5 kg and 3 kg were crushed to 70% less than 2 mm using a Boyd crusher. The sample was rotary split and about 1 kg of the sample pulverised to 85% passing 75 microns. Samples from RKDD001 to RKDD015 were analysed for lithium only using the ore grade lithium specialised four acid digestion method and inductively coupled plasma atomic emission spectroscopy (ICP-AES) finish (ALS Code Li-OG63). This method utilises 0.4 g of the sample. The ME-OG62o methods was triggered as an overrange method for the Li-OG3 analytical method. The sample analysis was completed at ALS Vancouver, BC, Canada. A handheld x-ray fluorescence (XRF) machine was used to analyse caesium, rubidium, tin and tantalum for the samples from RKDD001 to RKDD0015. Lithium assaying was completed on 0.2 g of the pulp from drillholes RKDD016 to RKDD0046 using the sodium peroxide fusion industry analytical method and inductively coupled plasma mass spectrometry (ICP-MS) finish (ALS Code ME-MS89L) at ALS Vancouver, BC, Canada. 414 samples from RKDD006 to RKDD0011 and RKDD014 to RKDD0015 were selected and analysed using the ME-MS89L method at a later stage.
Drilling techniques	*Drill type (e.g. core, RC, 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.).*	Surface diamond drilling using the HQ3 (61.1 mm) and NQ3 (45 mm) triple tube diameters was employed at the Reung Kiet Lithium Project ("RKLP" or "the Project"). A total of 54 holes totalling 8,574.5 m were drilled on the Project. Drilling was carried out between April 2019 and March 2022 by contract drill company, Drill Corp Thailand (a subsidiary of Drill Corp Asia). The drilling was undertaken with most holes at an azimuth of 310° and inclined at 55–65° which is appropriate given the relatively moderate dip of the geology. All core was oriented using the spear method. The Competent Person considers that the drilling techniques adopted were appropriate for the style of mineralisation and for reporting a Mineral Resource.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Drill sample recoveries are recorded for every run as part of the logging. The core recovery from the 46 DD holes averaged 98%. Recoveries that are <40% are associated with weathered zones.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	The triple tube drilling method was used to maximise recovery in weathered zones. Drillers are instructed to drill slowly when drilling though a weathered profile to achieve good recoveries. Any sampling issues were addressed and rectified immediately.
	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.	There was no reported evidence of sample bias due to loss of sample.
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.*	Logging is completed on paper copies and transferred to Microsoft Excel spreadsheets by the geologists. All drillhole logging was detailed with lithology, geology descriptions, weathering, orientation depths, structure and recovery recorded on logging sheets. Geotechnical logging was limited to contacts and major structures. The Competent Person considers logging appropriate for reporting of a Mineral Resource.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is generally qualitative with sufficient detail. All core is stored at site and has been photographed wet and dry.
	The total length and percentage of the relevant intersections logged.	All diamond core has been geologically logged in full.
Subsampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	The diamond drill core was split into half using a core saw while a knife and a shovel were used to split the weathered material into half. A representative half core sample was dispatched to ALS laboratory for preparation and analysis. A duplicate sample was collected at the laboratory by rotary splitting the samples of the nominated samples after crushing.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No reverse circulation samples were collected for the Project. 56 Trench samples (from nine trenches) and 53 rock chip samples were collected but these have not been used for Mineral Resource estimation.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	All samples preparation was completed at ALS laboratory Vientiane in Laos. Samples received at the laboratory were weighed, and crushed to 70% less than 2 mm. The sample was rotary split to obtain a duplicate when required and the remaining samples returned as coarse rejects to site and stored under cover for future reference. Approximately 1 kg of the sample was pulverised to 85% passing 75 µm. The laboratory reports the particle size analysis for the crushed and pulverised samples.
	Quality control procedures adopted for all subsampling stages to maximise representivity of samples.	Crushed duplicates were collected as every 10th sample at the laboratory using ALS laboratory's internal protocols.
	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.	Laboratory coarse duplicate samples were collected by rotary splitting the original crushed sample at the laboratory to ensure representativity.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Received sample weights averaged 2.4 kg and sample sizes are considered appropriate to the grain size of the material being sampled.

Criteria	JORC Code explanation	Commentary
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.*	All samples were analyses at ALS Vancouver, BC, Canada. The techniques are considered total. 617 (17%) pulp samples for RKDD001 to RKDD015 were analysed for lithium only using the using the ore grade LI-OG63 four acid digestion method and ICP-AES finish. The ME-OG62o methods was triggered as an overrange method for the Li-OG3 analytical method. caesium, rubidium, tin and tantalum were analysed using the handheld XRF method on site by Pan Asia Metals Limited (PAM). The XRF assay results were validated using known laboratory assayed values for caesium, rubidium, tin, and tantalum. The raw XRF results were adjusted based upon the simple linear regression formulas derived from the data review of XRF assays vs ALS assays completed by PAM A total of 2,951 (83%) samples from RKDD016 to RKDD0046 and other selected samples from RKDD006 to RKDD0011 and RKDD014 to RKDD0015 utilised the Super trace ME-MS89L analytical method which is a sodium peroxide fusion method and ICP-MS finish. 52 elements were determined by ME-MS89L and include Ag, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Re, Sb, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, and Zn. The LI-OG63 and ME-MS89L analytical techniques are industry standard for lithium and considered total. PAM is encouraged to re-assay the samples analysed by XRF using industry standard methods
	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.	A PAM owned Olympus Vanta M Series Model VMW-CCC-G3-U handheld XRF analyser with reading time totalling 50 seconds XRF instrument was used to analyse caesium, rubidium, tin and tantalum from drillholes RKDD1 to RKDD0015 during the early stages of drilling. 617 samples were analysed by this method.
	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.	11 types of internal standards made from trench pulps were inserted as every 20th sample. A total of 197 internal standards were analysed between 2021 and 2022. Internal standards were not inserted for holes RKDD001 to RKDD005 during the early stages of drilling. Performance of standards was checked using the departure from the mean. Lithium analysis shows that departure from the mean value for all standards is typically ±5% while the other elements show variances. For caesium, rubidium, tin and tantalum, the departure values from the mean are greater than ±10%. PAM inserted three types of crushed blanks at a rate of 1:20 samples. A total of 210 the blanks made from limestone obtained from a local construction quarry shop were inserted. Three populations of the course blank were noted and, these are termed CB1 with lithium results which are at or near the lower limit of detection, CB2 with lithium results ranging from 5 ppm to 25 ppm and CB3 with lithium results generally between 25 ppm and 50 ppm.

Criteria	JORC Code explanation	Commentary
		343 crushed duplicate samples were inserted at a rate of one in approximately every 10th sample. The crushed duplicate plot for lithium shows a good correlation between the primary and the duplicate sample and no evidence of bias in the lithium assay results. In addition, ALS completed internal laboratory certified reference material (CRM), blank and pulp duplicates analyses. The Competent Person recommends the following: • Use of commercially certified reference materials • Assaying the blank samples before use to confirm that elements of interest are undetectable. • Re-assay the pulps for the samples analysed by XRF method using the industry standards method • Compile written procedures for quality assurance process.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intersections have been verified by the Company Senior and Chief Geologists. Lithium mineralisation is associated with distinct, purple-coloured zones.
	The use of twinned holes.	Twin holes have not been drilled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Logging is completed manually on paper designed for the logging at the core shed by the geologist. The data is then transferred to Microsoft Excel spreadsheets. Collection of relevant geological, lithology, geotechnical, structure and rock type information are collected into separate log sheets. The data are checked by the Senior Geologist and Chief Geologist to minimise transcription errors. Data is validated to ensure the field and assay data is merged appropriately. The data is stored on the site laptop and backed up on two external drives and on the Chief Geologist's laptop. Hard copies for log sheets and survey data are kept on site. CSA Global has randomly checked the laboratory raw data against the database assays. A total of 562 values assayed using the Li-OG63 method incorrectly recorded under the Li ppm were corrected. No formal documentation of logging and sampling procedures have been completed by PAM.
	Discuss any adjustment to assay data.	PAM and CSA Global converted Li ppm values to Li_2O by multiplying by a conversion factor of 2.153 calculated from atomic mass and molecular weight to align with industry standards for reporting lithium metal. 617 raw XRF assays for samples from holes RKDD001 to RKDD015 (tin, tantalum, rubidium and caesium) were adjusted based upon the simple linear regression formulas derived from the plots by PAM. All assays below detection limit have been converted to half the detection limit by PAM.

Criteria	JORC Code explanation	Commentary
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	50 hole collars (RKDD001 to RKDD0050) were located using a differential global position system (GPS) by Geophysical consultants (Thailand) Co. Ltd (Austhai). The differential GPS method has an accuracy of approximately 10 cm. Four holes (RKDD051 to RKDD0054) were located using a handheld GPS. Downhole surveys for 91% of the holes were completed using a Reflex camera. The surveys were checked and validated by the site and Senior geologists. 9% of the holes (RKDD001 to RKDD005) drilled in the early phases of the Project do not have downhole surveys. The Competent Person considers a relatively high level of confidence can be placed in the location of data points.
	Specification of the grid system used.	The Project utilises the UTM WGS84 Zone 47N coordinate system.
	Quality and adequacy of topographic control.	A photogrammetry survey of the area was conducted by Austhai in October 2021. The survey generated the digital terrain model (DTM) and contour lines at 0.25 m, 0.5 m, and 1 m intervals using four 3D control points for maximum accuracy. In February 2022, Austhai conducted a differentia GPS survey along the shoreline of the old waterbodies to estimate the most accurate elevation of the open pits and determine the volume of the waterbodies. The volume of historical waterbodies and the approximate depths of the mined pits were incorporated in the photogrammetric survey. The Competent Person considers the topography to be adequate at this stage of exploration.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Drill spacing over the Reung Kiet deposit ranges from approximate 50 m x 50 m to 100 m x 100 m along and across strike.
	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.	The Competent Person considers the drill spacing appropriate for reporting a Mineral Resource.
	Whether sample compositing has been applied.	68% of the sample are between 0.6 m and 1.4 m. No composting was applied at the sampling stage.
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.*	The mineralisation strikes northeast-southwest deposit and has a moderate to steep deep to the southeast. There is no evidence of major structures disrupting the continuity of the mineralisation. The Competent Person considers the general drillhole azimuth of about 310° inclined at 55–65° and spacing as appropriate for reporting a Mineral Resource.
	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.	The relationship between the drilling orientation and the orientation of key mineralised structures is unlikely to have introduced a sampling bias.

Criteria	JORC Code explanation	Commentary
Sample security	*The measures taken to ensure sample security.*	All drill core is securely kept under lock and key at the core shed on site. Samples were securely packed on site and recorded before being dispatched to the laboratory. Sample submission forms confirming the number of dispatched samples. Samples were couriered via Safeway Logistics to Laos via the Nong Khai-Laos boarder check point in Nong Khai Province of Thailand. The laboratory confirms the receipt of sample upon receipt. Pulp samples for analysis are air-freighted to Vancouver in accordance with laboratory protocols. The Competent Person considers the chain of custody and security measure taken from the field capture to delivery to Nagrom appropriate.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No independent audits or reviews have been undertaken. CSA Global has reviewed the sampling and geological data before using it for the Mineral Resource estimate (MRE) considers the data appropriate for reporting a Mineral Resource.

Section 2: Reporting of Exploration Results

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 Reung Kiet Lithium Project consists of one Special Prospecting Licence (SPL) 3/2562. PAM holds a 100% interest in three contiguous SPLs, collectively covering about 38 km^2. The three prospecting licences are SPL 1/2562, SPL 2/2562 and SPL 3/2562 which is the southern most of the three tenements.
	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.	SPL 3/2562 was granted on 15 February 2019 and expires in February 2024. The SPL is registered under Siam Industrial Metal Company Limited, which is 100% owned by PAM. The Competent Person can confirm that according to Legal Opinion issued by Legal Asean (Thailand) dated 17 September 2020 the tenement is in good standing. The Competent Person has not verified any potential social or environmental pediments to progressing the Project.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	A joint Thai and Institute of Geological Sciences (a precursor of the British Geological Survey) study was conducted in the area in the 1960s. The study included geological mapping, documentation of old workings, surface geochemical sampling, mill concentrates and tailings sampling and metallurgical test work on the Reung Kiet pegmatite. A historical open pit mine extracting tin from the weathered pegmatites was conducted into the early 1970s. The pit is about 500 m long, 125 m wide and extends to 25 m below surface to the top of hard rock. The Reung Kiet project was part of a major tin mining region up until the mid-1980s but there is little detailed information regarding previous exploration and mining in the area.

Criteria	JORC Code explanation	Commentary
		In 2011, Thai company Mae Fah Mining Co. Limited lodged prospecting licence applications over area. In 2014, UK based ECR Minerals Plc entered into an option agreement to acquire the project, but the option did not proceed, and the tenement application lapsed. 11 rock chips samples from unknown locations and analytical results of eight of the 11 samples reported elevated Li_2O grades of up to 1.9%. Accessory tin and tantalum results were reported. PAM was granted the three SPLs in 2019.
Geology	*Deposit type, geological setting and style of mineralisation.*	The project is located the Western Province of South-East Asia Tin tungsten Belt. The Reung Kiet project sits adjacent and sub-parallel to the regionally extensive northeast trending Phangnga fault. The Cretaceous age Khao Po granite intrudes into the Palaeozoic age Phuket Group sediments along the fault zone, Tertiary aged lithium-caesium-tantalum (LCT) pegmatite dyke swarms intrude parallel to the fault zone. The Reung Kiet pegmatite trend is divided is into two main parts, Reung Kiet North and Reung Kiet South. Reung Kiet North includes the old open cut and immediate surroundings. Reung Kiet South extends along strike to the southeast and encompasses a prominent knoll. The pegmatites at Reung Kiet strike at about 220° parallel to the Phang Nga Fault Zone. Pegmatite dykes and veins at Reung Kiet North dip at a high angle ranging from 65° to 70° to the southeast while those at Reung Kiet South dip at angles between 60° and 30°. Drilling beneath the pit has intersected dykes up to 30 m wide. The dykes and veins host the bulk of the lithium mineralisation; however, it is common for the adjacent and intercalated meta-siltstone to contain elevated lithium grades. The pegmatites are composed of quartz, feldspar, albite, muscovite with minor cassiterite and tantalite minerals. Siltstones adjacent to the pegmatites generally contain lithium mineralisation. The Competent Person is of the opinion that the understanding of the Project's geology is sufficient at this stage of exploration. More work needs to be done to explain the mineralisation in the siltstones adjacent to the pegmatites.
Drillhole information	*A summary of all information material to the understanding of the Exploration Results including a tabulation of the following information for all Material drillholes:* • *Easting and northing of the drillhole collar* • *Elevation or RL (Reduced Level – Elevation above sea level in metres) of the drillhole collar* • *Dip and azimuth of the hole* • *Downhole length and interception depth* • *Hole length.*	The collar summary of DD holes completed Reung Kiet deposits which were used in the MRE is presented in Table 3. A drillhole location plan is included as Figure 6.
	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.	Exploration Results are not being reported.

Criteria	JORC Code explanation	Commentary
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.*	Exploration Results are not being reported.
	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.	Exploration Results are not being reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Exploration Results are not being reported.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	Exploration Results are not being reported.
	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.	The mineralised zones dip at approximately 40–60° to the southeast. The dip of the mineralisation gradually steepens towards the northeast. The mineralisation is generally intersected perpendicular to the drill orientation.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. "downhole length, true width not known").	Exploration Results are not being reported.
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 drillhole collar locations and appropriate sectional views.*	A project, tenement and drillhole location plan are included in the report. Selected representative grade cross sections are included as in the main report
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.*	Exploration Results are not being reported.
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.*	Other exploration work completed is described above in "Exploration done by other parties".
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).*	The Competent Person recommends infill drilling in areas with a grid spacing wider than 100 m x 100 m grid to improve the confidence in the Mineral Resource. Down-dip infill drilling will improve variography and data interpolation. Extensional drilling is recommended to the northern, southern and deeper parts of the deposit where mineralisation remains open. More density measurements should be collected to cover the extents and depth of mineralised domains. Use of commercially CRMs is recommended.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Diagrams showing the location of the drilled holes and tenement have been included in this report.

Section 3: Estimation and Reporting of Mineral Resources

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.*	Drillhole data required for the Mineral Resource estimation was provided to CSA Global Pty Ltd (CSA Global) as collar, assay, geology, specific gravity (SG) and weathering Microsoft Excel files by PAM. Data validation included checks for incorrect hole depths, overlapping intervals, missing survey data, missing data. Random cross checks were made between the original assay file certificates and the Microsoft Excel files. The data was inspected in 3D software to ensure there are no issues with the topographic digital terrain model (DTM).
	Data validation procedures used.	Data was checked for duplicate intervals, missing assays, and that the sample intervals did not extend below end of hole depth.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Ms Millicent Canisius (CSA Global Senior Consultant, Resource Geology) visited the RKLP between 9 and 11 May 2022 on behalf of the Competent Person. Several drill collars were located and confirmed in the field. Data collection, logging and sampling procedures were discussed and verified. Core inspection was completed.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The mineralisation interpretation was based on a combination of Li_2O drill assay greater than 0.1% and logged lithology. Three broad mineralisation envelopes were generated using lithology and assays and the envelope may include samples with grades that are less than 0.1% Li_2O as internal dilution. The mineralised envelopes are separated by very low grade (generally <0.1% Li_2O) siltstone zones which are largely unsampled.
	Nature of the data used and of any assumptions made.	54 logged drillholes that were geologically logged and 46 holes with assays were used for the geological interpretation.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Additional infill drilling will be used to refine the current interpretation; however, this is unlikely to result in any significant changes to the geological interpretation.
	The use of geology in guiding and controlling Mineral Resource estimation. *The factors affecting continuity both of grade and geology.*	Geological domaining to guide the Mineral Resource estimation used a combination of assays and geological logging. Trenches and rock chips were used to guide the mineralisation outcrop on surface. The mineralisation is reasonably continuous along and across strike.
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.*	The RKLP has been drilled over a strike length of 1 km in a northeast-southwest direction. Zone 1 generally narrow and averages about 8 m, Zone 2 thickness averages 60 m and Zone 3 comprises the deeper part of the mineralised zone and averages 15 m in thickness. Zone 0 is generally hosted by unmineralised siltstone The mineralisation extends from surface to about 150 m below surface and varies in thickness from section to section. The mineralisation remains open at depth and on strike.

Criteria	JORC Code explanation	Commentary
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.*	Having considered the dimensions of the mineralised pegmatite vein swarms and intercalated siltstones, it is CSA Global's view that by applying a linear estimator such as ordinary kriging (OK), excessive smoothing will be introduced. Mining operations are planned and designed based on block models. A fundamental parameter of this type of model is the choice of block dimensions or selective mining unit (SMU) size, which affects the operation and mining costs. In the early stages of mining operations, the available information is mainly drillholes samples, which may bring negative outcomes such as over-smoothed models, especially for complicated ore deposits. Therefore, a change of support is necessary to determine the distribution of grades at an equivalent volume to the SMU size. The non-linear localised uniform conditioning (LUC) method is appropriate for improved grade estimation of small blocks, when the input data spacing is coarse such as it is at Reung Kiet, where nominal spacing is 50 m x 50 m. Generally, when the density of drillhole information is relatively low compared to the desired estimation block size, the estimation of these "small" blocks by the usual linear methods (e.g. by inverse distance weighting (IDW) or OK) would normally lead to a gross distortion, in the form of smoothing.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	This is the maiden MRE and there are no records from a limited amount of artisanal mining that has previously taken place.
	The assumptions made regarding recovery of by-products.	While Li_2O is the targeted variable with the greatest economic value, tin, tantalum, caesium and rubidium have been co-estimated and reported using a Li_2O cut-off. All elements have been sampled in equal numbers.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	The presence of deleterious elements has not been investigated in this phase.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The panel size for the LMUC estimates is 30 m x 40 m x 5 m where the drillhole spacing is about 50 m x 50 m and the sample length is 1 m on average. The size of the SMUs within the panel is 5 m x 10 m x 5 m and closely approximates the intended selective mining dimensions envisaged.
	Any assumptions behind modelling of selective mining units.	The nature of the mineralisation requires a small estimation block and selective mining. A larger estimation block will comprise of a large proportion of unmineralized material and a diluted, smoothed average grade and will not reflect the grade that can be achieved by selectively mining.
	Any assumptions about correlation between variables	All Zones except Zone 3 have been estimated by co-kriging. Statistical and geostatistical correlation range between moderate and strong in Zone 1 and Zone 2.

Criteria	JORC Code explanation	Commentary
	Description of how the geological interpretation was used to control the resource estimates.	Because individual pegmatites could not be modelled confidently and are too numerous to model individually, broad envelopes, which define the three mineralised Zone 1, 2 and 3, encapsulate vein swarms of pegmatites which occur together in a coherent pattern of mineralisation. Furthermore, Zones 1 and 2 were divided by weathering/alteration into oxidised, transition and fresh ores. Zone 3 comprises of only fresh ore.
	Discussion of basis for using or not using grade cutting or capping.	Parameters considered were the numbers cut, the impact on the mean grades and the continuity of the high-grade tail of the distribution.
	The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.	Validation comprised of (geo)statistical and visual comparisons. (Geo)statistical methods used included a comparison of SMU grade estimates to the 1 m composites, comparison of grade-tonnage curves from a change of support model (Discrete Gaussian Model) with those of the estimated grades to primarily obtain a view of the amount of smoothing from the linear estimate. Swath plots were constructed along the three axes and compare estimates to 1 m composite grades.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages are estimated on a dry tonnage basis. The SG measurements were conducted on drill core that has been stored for months in a hot dry shed, all oxide SGs were wax coated. Fresh rock SGs were not wax coated, but the rocks are extremely massive. The calculated SGs are in line with expectations for the materials tested.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	A 0.25% Li_2O cut-off was applied which yields a life-of-mine average head grade of 0.45% Li_2O, which is 1.11% LCE (Li_2CO_3) assuming a 65% recovery of Li_2CO_3, and that by-products will contribute an additional 15% in value.
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.*	It is envisaged that open cut mining, with oxide material initially extracted from the Reung Kiet South area and potentially blended with fresher material commencing at the base of the old open cut in the Reung Kiet North area. Depending upon strip ratio and other modifying factors, underground mining is likely to be undertaken at some point. PAM believes it would need to mine and process 1-1.5 Mt of run of mine with a strip ratio around 5:1 and much less during the early years of the mine. Open pit mining costs have been benchmarked against similar operations in Thailand.
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.*	Previous PAM work conducted on weathered pegmatite from mostly trench and some rock-chip samples, showed +90% Li recovery to flotation rougher concentrate, grading about 2.8% Li_2O. In new and current work preliminary results at this stage indicate lithium recoveries in oxide material are ~65% and >80% to 85% in fresh rock. Mineralogical and liberation analysis indicates the lepidolite is typically fine-medium grained with 95% liberation achieved at a grind size of 80% p150 microns and is thus "available" for physical recovery.

Criteria	JORC Code explanation	Commentary
		The flotation testwork is ongoing and is yet to be optimised. However, it is a reasonable expectation that 70–80% of the lepidolite can be recovered to a concentrate grading between 3% Li_2O and 4% Li_2O over the life of the Project. Rubidium and caesium will report to the lepidolite concentrate and are potentially recoverable as well as potassium and calcium sulphate by-products. Tin and tantalum recovery testwork is yet to be undertaken. However, it is a reasonable expectation that minerals containing tin (cassiterite) and tantalum-niobium minerals (tantalite-microlite) can be recovered to concentrates via simple gravity methods, and then potentially further upgraded/separated by magnetic methods. It is also the case that these minerals were recovered when the Reung Kiet mine was active in late-1960s to early-1970s when the weathered pegmatite material was extracted. PAM is continuing flotation testwork and will also conduct tin-tantalum recovery testwork.
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.*	Environmental factors have not been considered at this early stage of project development.
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.*	Density samples were collected from full and half cores over intervals ranging from 2 cm to 118 cm, averaging 17 cm. All density measurements were taken from Zone 2 which is volumetrically by far the largest domain. The SGs in Zone 2 Fresh were estimated by OK and Zone 2 Oxides and Transition ores were assigned the average densities. Refer additional detail regarding assumptions below. CSA Global has discounted the classification to Inferred Mineral Resources across the entire deposit because of the lack of density measurements and because of QAQC shortcomings described previously in Section 1 of Table 1.
	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.	All measurements were collected from the mineralised area, Zone 2. 53 samples were measured accounting for a wax coating using the following formula: *waxed SG = weight in air / ((wax-weight in air – wax-weight in water) -(wax-weight in air - weight in air/0.9)* The remaining 464 samples were measured using the Archimedes principal SG = weight in air / (weight in air - weight in water).

Criteria	JORC Code explanation	Commentary
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	40 samples were collected in oxide material with a mean SG of 2.01 t/m^3, nine in transition material with a mean SG of 2.42 t/m^3 and 468 samples were collected in fresh material and has a mean SG of 2.67 t/m^3. The SGs in Zone 2 Fresh were estimated by OK and Zone 2 Oxides and Transition ores were assigned the average densities as shown above because of low sample numbers. The estimated average SG for Zone 2 Fresh is 2.68 t/m^3. Zone 1 and Zone 3 were assigned the average of the Zone 2 samples based on the weathering domain.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	After considering data quality, data distribution, and geological and grade continuity, the Reung Kiet MRE was wholly classified as an Inferred Mineral Resource for the following reasons: • Sampling QAQC is lacking in detail and specifically the absence of reliable standard reference materials (SRMs) and/or CRMs plus the use of the portable XRF analyser is not up to good industry standards. SRMs were collected from trenches and comprise only of weathered materials. • SGs have not been collected from Zones 1 or 3 and averages from Zone 2 were applied across oxidised, transition, and fresh ores.
	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).	The quality of the estimates as measured by the OK criteria such as kriging efficiency, the weight of the mean, the slope of regression and the percentage of negative estimation weights, amongst other, vary from poor to very good and based on those parameters alone, some parts of the orebody would achieve higher classification than has been applied to the Reung Kiet MRE. Estimates generally reproduced the mean of the input 1 m composites and estimation smoothing by OK varies between moderate and low. Variography ranges between poor and robust. Geological and grade continuity are generally well defined although in Zone 3 anomalous behaviour is evident in all the five elements as seen when data are de-clustered. There are only 200 samples in Zone 3 but given that the MR is wholly classified as "Indicated" this is an issue to be investigated prior to the next MRE update. Validation comprised of (geo)statistical and visual comparisons. (Geo)statistical methods used included a comparison of SMU grade estimates to the 1 m composites, comparison of grade-tonnage curves from a change of support model (Discrete Gaussian Model) with those of the estimated grades to primarily obtain a view of the amount of smoothing from the linear estimate. Swath plots were constructed along the three axes and compare estimates to 1 m composite grades.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The MRE appropriately reflects the Competent Person's views of the deposit.
Audits or reviews	*The results of any audits or reviews of MREs.*	No previous reviews have been conducted on the Reung Kiet Mineral Resource.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the MRE 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 Mineral Resource accuracy is communicated through the classification assigned to this Mineral Resource. The MRE has been classified in accordance with the JORC Code (2012 Edition) using both a quantitative (geostatistical/statistical) and a qualitative (visual) approach.
	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.	The recoverable resources estimation method, Localised Multivariate Uniform Conditioning, was applied in Zone 2 which contains about 70% of the total tonnes, with the specific purpose of providing the best local estimation of the in-situ resources. Where LMUC was not applied, local estimation was undertaken by OK and validated using Discrete Gaussian Model change of support.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No records, from artisanal mining that has occurred, are available.

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