Report for Orange River Pegmatite Geology and Resource Estimation of the D, E and F Pegmatites
Project Number JB018308
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1 EXECUTIVE SUMMARY

A total of 15 Ta_2O_5 mineralised pegmatites have been identified on the Orange River Pegmatite (Pty) Ltd (ORP) property. This Mineral Resource estimate (MRE) has quantified the outcropping and shallow resources on three groups of the pegmatites, namely the D, E and F pegmatites.

These pegmatites are of uniform thickness (generally about 1.5–2.5 m thick), are tabular, non-zoned, gently dipping, and contain tantalum, niobium and lithium mineralisation, together with quartz, sugary albite, spodumene and a number of other minerals. They intruded into competent meta-gabbros and are bound on the northern side by a northwest trending mylonitic zone.

Mineralogically the four main constituents of the pegmatites are white to grey massive quartz, crystalline perthitic feldspar, lithian muscovite, and sugary albite. Minor constituents are spodumene, beryl, lepidolite, muscovite, apatite, fluorite, biotite, tantalite and microlite. The mineralogy gives the pegmatites a whitish appearance, which contrasts strongly with the meta-gabbroic host rock.

This estimate has incorporated all geological knowledge and exploration information to 30 March 2022. Geological continuity of the pegmatites has been established through mapping and sampling (chip and channel) of surface exposures, and the extension of these pegmatites under shallow cover has been established by diamond drilling.

The thickness of the pegmatites has been established through modelling of the hangingwall and footwall contacts. Ta_2O_5 ppm, Nb_2O_5 ppm and Li_2O % grades have been estimated using ordinary kriging, with geostatistical continuity of the Ta_2O_5 grades being established through variographic analysis.

The summary Mineral Resources are shown in Table 1.1.

Table 1.1 Summary Mineral Resources for D, E and F pegmatites as at 1 May 2022

D, E and F Classification	Area	Mass (kt)	Ta_2O_5 ppm	Nb_2O_5 ppm	Li_2O %	Ta_2O_5 tonnes
Indicated	Total D	568	365	87	0.270	207
	Total EF	577	578	65	0.070	334
	Subtotal	**1,145**	**472**	**76**	**0.169**	**541**
Inferred	Total D	444	365	79	0.340	162
	Total EF	995	557	69	0.050	554
	Subtotal	**1,439**	**498**	**72**	**0.139**	**716**
Comparison to September 2021						
Indicated Sept 2021	Total	664	431	76	0.280	286
Inferred Sept 2021	Total	544	389	75	0.300	212

Notes: 236 ppm Ta_2O_5 cutoff

The geological and grade continuity of the pegmatites was sufficient to classify the reasonably well-explored area as Indicated Resources, with Inferred Resources being extrapolated 50 m beyond the last line of sampling.

On the D pegmatites this MRE has identified a total of 568 kt of Indicated Resource, at an average grade of 365 ppm Ta_2O_5, 87 ppm Nb_2O_5 and 0.27% Li_2O, and a total of 444 kt of Inferred Resource, at an average grade of 365 ppm Ta_2O_5, 79 ppm Nb_2O_5 and 0.34% Li_2O, as shown in Table 1.2. The total Indicated and Inferred Resources are 1,214 kt at an average grade of 412 ppm Ta_2O_5, 76 ppm Nb_2O_5, and 0.29% Li_2O.

The total Mineral Resources comprise 2.6 Mt at an average Ta_2O_5 grade of 486 ppm, with a total in situ Ta_2O_5 content of 1,257 tonnes.

Table 1.2 Indicated and Inferred Resources on the D pegmatites as at 1 May 2022

D Class v5.1	D v5.1 for Estimation	Mass (kt)	Ta_2O_5 ppm	Nb_2O_5 ppm	Li_2O %
Indicated	D0 v5	25	314	41	0.18
	D1 v5	323	340	96	0.35
	D2 v5	220	408	78	0.17
	Total	**568**	**365**	**87**	**0.27**
Inferred	D0 v5	90	325	46	0.29
	D1 v5	250	361	93	0.42
	D2 v5	103	408	72	0.19
	Total	**444**	**365**	**79**	**0.34**
Indicated + inferred	**D0 v5**	**115**	**322**	**45**	**0.27**
	D1 v5	**573**	**349**	**95**	**0.38**
	D2 v5	**324**	**408**	**76**	**0.17**
	Total	**1 012**	**365**	**83**	**0.3**

Note: Resources are reported at 236 ppm Ta_2O_5 cutoff.

On the E and F pegmatites this MRE has identified a total of 577 kt of Indicated Resource, at an average grade of 578 ppm Ta_2O_5, 65 ppm Nb_2O_5 and 0.07% Li_2O, and a total of 995 kt of Inferred Resource, at an average grade of 557 ppm Ta_2O_5, 69 ppm Nb_2O_5 and 0.05% Li_2O, as shown in Table 1.3. The total Indicated and Inferred Resources are 1,572 kt at an average grade of 564 ppm Ta_2O_5, 67 ppm Nb_2O_5, and 0.05% Li_2O.

Table 1.3 Indicated and Inferred Resources on the E and F pegmatites as at 1 May 2022

E-F Class	E-F v5.2 for Estimation	Mass (kt)	Ta_2O_5 (ppm)	Nb_2O_5 (ppm)	Li_2O %
Indicated	E7 v5	75	626	59	0.24
	E8 v5	26	723	71	0
	E6 v5	40	513	54	0.1
	F1 v5	311	563	59	0.03
	E4 v5	3	748	56	0.01
	E3 v5	53	460	76	0.14
	E2 v5	68	660	95	0.02
	Total	**577**	**578**	**65**	**0.07**
Inferred	E7 v5	72	649	59	0.17
	E8 v5	61	709	67	0.01
	E6 v5	0	529	58	0.13
	F1 v5	259	560	57	0.02
	E4 v5	6	756	57	0.01
	E3 v5	231	456	72	0.1
	E2 v5	365	571	77	0.02
	Total	**995**	**557**	**69**	**0.05**
Indicated + Inferred	**E7 v5**	**146**	**637**	**59**	**0.21**
	E8 v5	**87**	**713**	**68**	**0**
	E6 v5	**41**	**513**	**54**	**0.1**
	F1 v5	**570**	**561**	**59**	**0.03**
	E4 v5	**10**	**753**	**57**	**0.01**
	E3 v5	**284**	**457**	**73**	**0.11**
	E2 v5	**434**	**585**	**80**	**0.02**
	Total	**1 572**	**564**	**67**	**0.05**

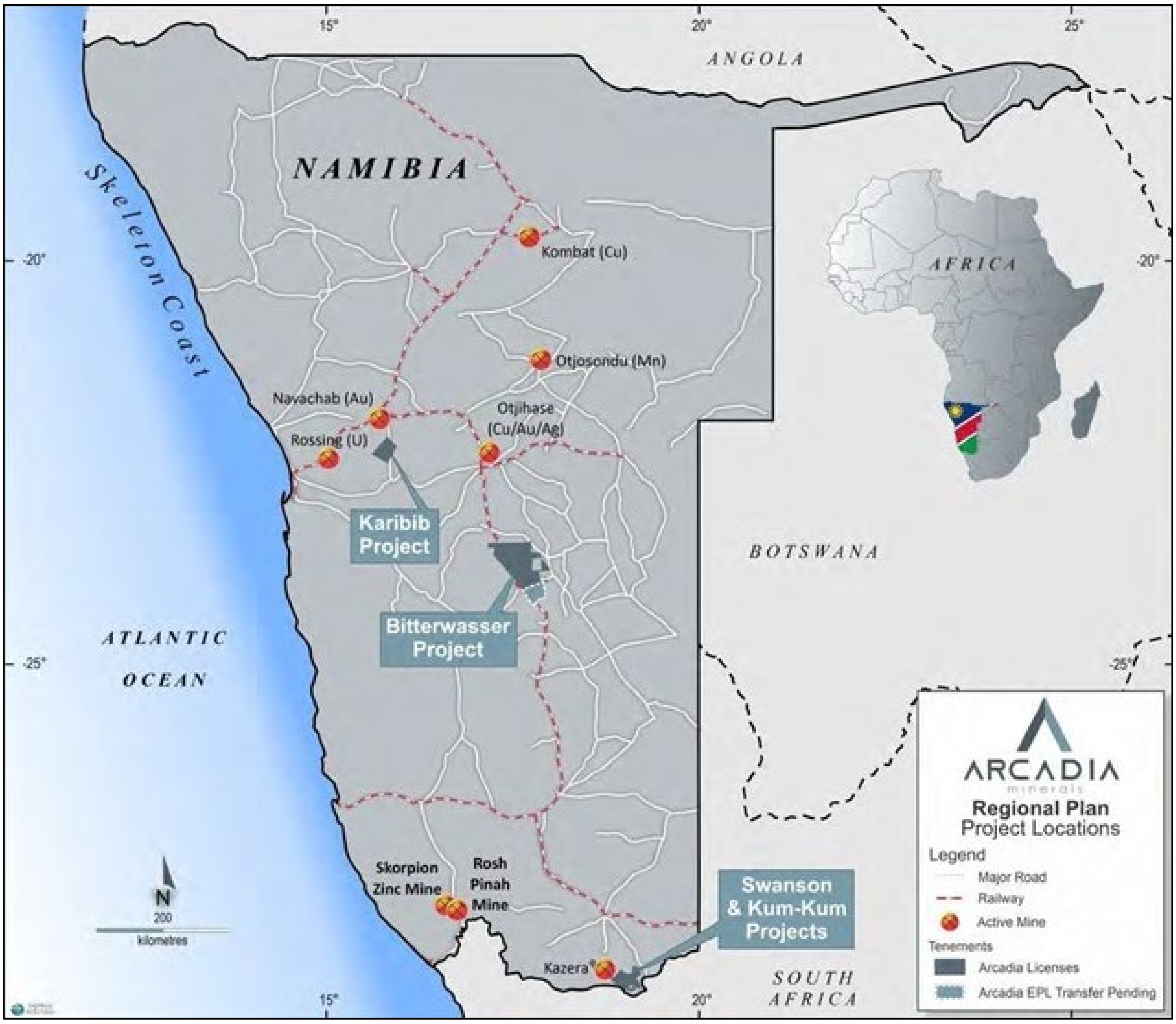
Note: Resources are reported at 236 ppm Ta_2O_5 cutoff.

2 BACKGROUND

Arcadia Resources was listed on the Australian Securities Exchange (ASX) in June 2021. The listing prospectus identified four exploration projects and associated prospective minerals located in Namibia:

- Swanson Project – prospective for tantalum and lithium
- Kum-Kum Project – prospective for nickel, copper, and platinum group elements (PGEs)
- Karibib Project – prospective for copper and gold
- The Bitterwasser Project – prospective for lithium-in-brines and lithium-in- clays.

Figure 2.1 Location of Arcadia Resources projects in Namibia



Source: Arcadia Resources June 2021 Prospectus

ORP owns the 14,671.5834 km^2 Exploration Prospecting Licence (EPL) 5047 that contains the Swanson Tantalite Project ("the Project"), which is located on the farms Umeis 110, Kinderzitt 132 and, Norechab 130 in southern Namibia, and is situated 100 km south of Karasburg and 15 km to the north of the Orange River.

Dr Johan Hattingh, Director of Creo Design, issued an independent geological report on the geology and exploration results of the Project in March 2021, and this report was incorporated in the Arcadia Minerals ASX listing prospectus dated 15 April 2021.

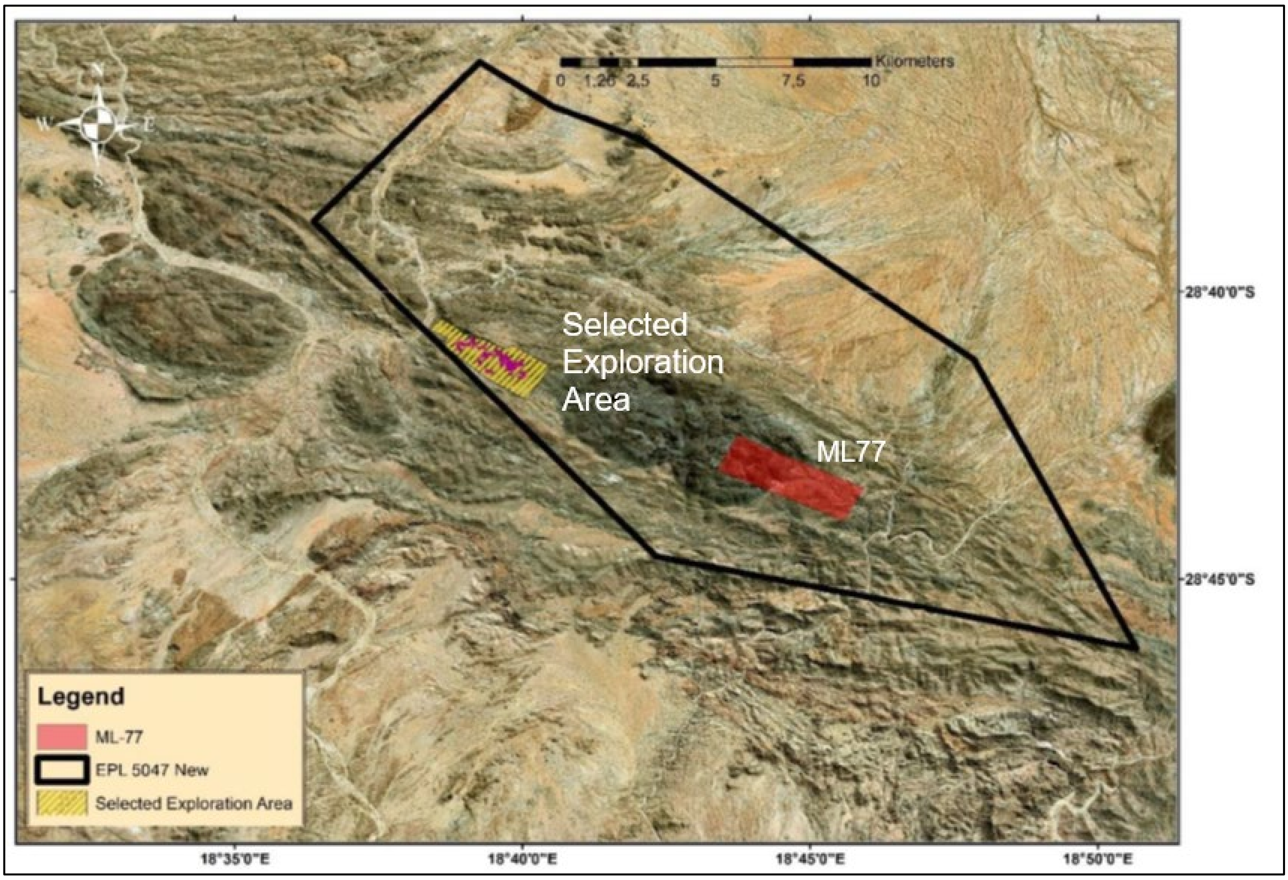
Snowden issued a report in October 2022 which described the geology, exploration activities and Mineral Resources of the Project. The exploration results were based on the compilation and sign-off undertaken by Dr Hattingh, and the Mineral Resources were based on the geological modelling and grade estimation undertaken by Snowden. To support this work, Dr Hattingh undertook a field visit in 2019, and Snowden personnel undertook a site visit on 17–18 August 2021. The results of the Snowden field visit confirmed the geological and statistical continuity of the pegmatites under investigation.

This report describes the updated Mineral Resource estimates for the deposit, and incorporates drilling undertaken between October 2021 and March 2022.

2.1 Location and tenure

The project is situated within EPL 5047, which comprises 14,672 hectares, and is licensed for prospecting of base metals, industrial minerals (lithium and tantalum) and precious metals on the farms Kinderzit 132, Umeis 110, and Norechab 130 (Figure 2.2).

Figure 2.2 Location of EPL 5047 in southern Namibia



Source: Arcadia Resources June 2021 Prospectus

EPL 5047 was originally issued to Mr Lisias Pius, a Namibian national. Following ORP's assessment, an agreement was signed with Mr Lisias on 11 October 2017. The EPL was then transferred to ORP during August 2018.

The EPL was renewed by the Minister and Mines and Energy on 8 May 2019 for a period of two years and was thus valid until 9 May 2021. A renewal application was lodged with the Ministry of Mines and Energy on 29 January 2021, and this was granted on 4 June 2021. The lease application and the grant have been viewed by Snowden.

Mr W. Wohlers, a Director of ENSAfrica (Namibia) independently examined the application and copies of the licence documents of both EPL 5047 and EPL 4663 and conducted a search of the Register of Mineral Licences with the Ministry of Mines and Energy on 9 June 2021. He confirmed that the aforesaid licences were accordingly endorsed with a stamp dated 8 June 2021, evidencing the renewal of the licences for a further period of two years from 4 June 2021 to 3 June 2023. During the renewal, the area was reduced from the original size of 19,672 hectares to its current size.

ORP also obtained an Environmental Clearance Certificate on 4 April 2019 from the Ministry of Environmental and Tourism which is valid for a period of three years, allowing ORP to undertake exploration activities on the EPL. A renewal application for the extension of the of the Environmental Clearance Certificate was lodge in March 2022.

A land-use agreement, including access to the property for exploration, has been signed with the owners of the farms Norechab 130, Kinderzit 132 and Umeis 110, which fall under EPL 5047.

ORP applied for a Mining Licence and Environmental Clearance Certificate in May 2020 over the Swanson Target area. The Mining Licence would only be issued after the Environmental Clearance Certificate approval has been obtained. The Ministry of Environmental requested additional specialist studies on the area, which were all completed by August 2021.

Kazera Global plc owns a 100% stake in the Tantalite Valley Mine situated in ML 77, located within EPL 5047. Having completed an exploration programme in 2019, Kazera defined a MRE in accordance with the JORC Code (2012) of 622.2 kt of lithium and tantalite resources.

2.2 Team

The Competent Persons for this MRE are listed in Table 2.1. All members of the team have significant experience in the exploration, Mineral Resource and Ore Reserve estimation of pegmatite hosted tantalum-niobium-lithium deposits, and in the activity to which they are signing off in this report.

Table 2.1 Competent Persons for the Orange River Project MREs

Name	Title	Responsibility	Relevant Experience	Site Visit
Matt Mullins	Executive Consultant, Snowden	Mineral Resource and Ore Reserve Estimates, overall Competent Person	Mr Mullins has been involved in estimating and reviewing Mineral Resources and Ore Reserves for over 40 years	Mr Mullins attended a site visit on the 17–18 August 2021
Johan Hattingh	Chairman, Creo Design	Exploration Results; Table 1 sections 1 and 2	Dr Hattingh has been intimately involved with the pegmatite deposits in Namaqualand and southern Namibia since 1997, where he conducted numerous feasibility studies on the exploitation of pegmatite hosted minerals which included large-scale bulk sampling between the years 2001 and 2006	Dr Hattingh visited the Swanson Pegmatite Swarm area on EPL 5047 during late August 2019
Konstant Petzer	Director, Expetra	Geological modelling; Mineral Resource Estimates; Table 1 section 3	Mr Petzer has extensive in the exploration and modelling of complex deposits, such as pegmatites modelling of complex deposits, such as pegmatites	Mr Petzer has not yet attended a site visit, but will do so during the next phase of exploration and subsequent resource estimation
Matthew Jarvis	Principal Consultant, Snowden	Mine planning, financial analysis and project leader	Mr Jarvis has 20 years of experience in opencast and mine planning and in financial analysis of tabular mineral deposits	Mr Jarvis attended a site visit on the 17–18 August 2021

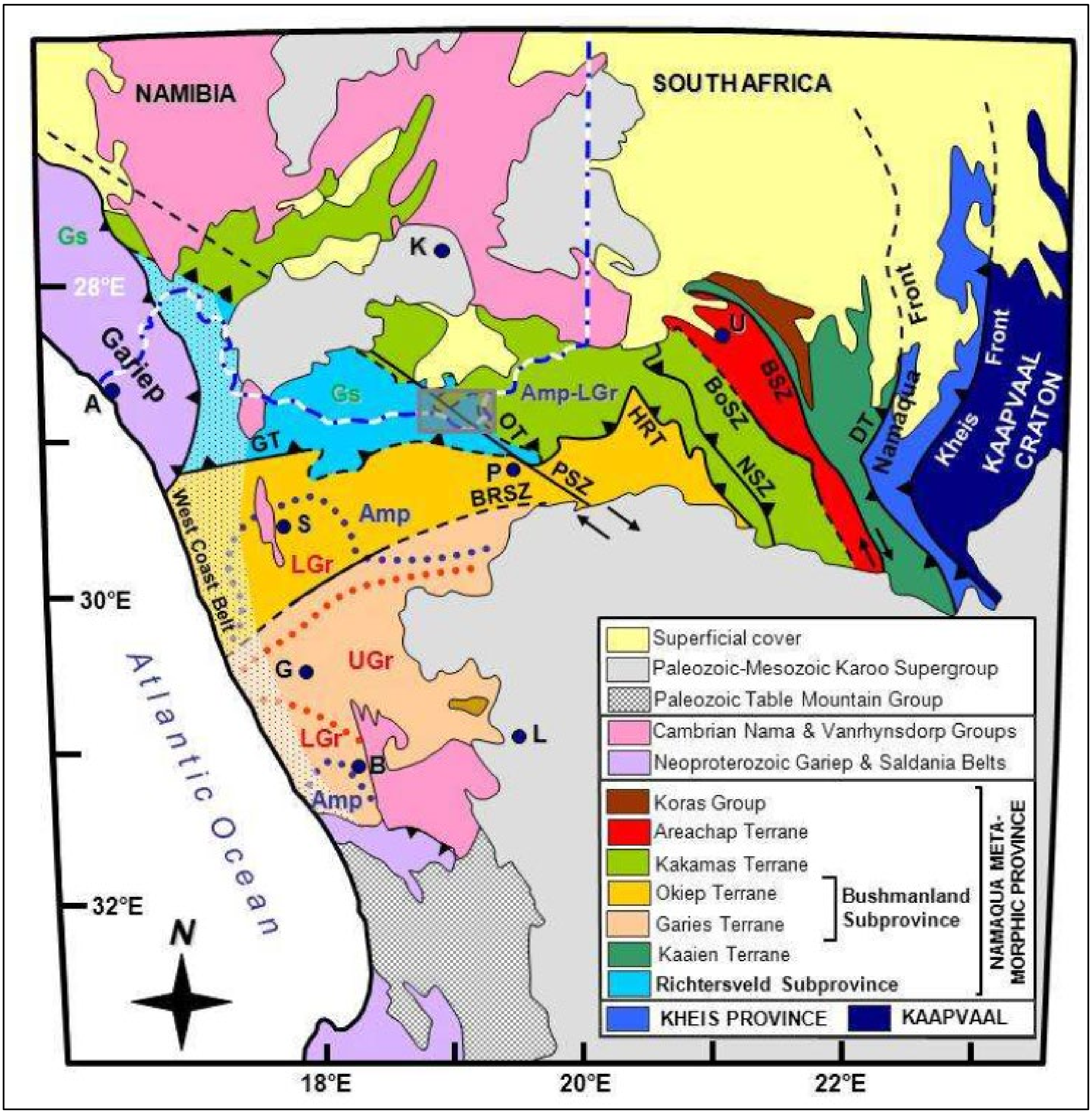
Mr Mullins, Dr Hattingh, Mr Petzer and Mr Jarvis are independent from ORP, with no current or historical involvement directly or indirectly with the company other than arm's length resource verification on an ad-hoc basis. The authors of this report also do not have any shareholding in Arcadia Resources, in ORP, or in a subsidiary company or any other company that is currently contracted to Arcadia Resources.

3 GEOLOGICAL SETTING

3.1 Regional geology

The Namaqua Natal Metamorphic Province (NNMP) in Namibia and South Africa forms the western sector of the 100–400 km wide Namaqua-Natal metamorphic belt (Figure 3.1) that spans southward across the subcontinent. It forms a small, but significant segment of the global network of Grenville-aged orogenic belts that were created during the assembly of the supercontinent Rodinia in the late (c. 1350–1050 Ma) Mesoproterozoic (Lambert, 2013).

Figure 3.1 Tectonostratigraphic and metamorphic subdivision of the NNMP as well as the major crustal features and terrane boundaries



OT = Onseepkans Thrust; PSZ = Pofadder Shear Zone (Lambert, 2013).
Source: Arcadia Resources June 2021 Prospectus

The NNMP is the result of accretion of juvenile Mesoproterozoic (1600–1200 Ma) supracrustal and plutonic rocks and the reworking of existing Kheisian age (c. 2000 Ma) continental crust along the southwest edge of the Archaean (>2500 Ma) Kaapvaal Craton. The amalgamation has traditionally been interpreted to be the result of continent-continent and/or arc-continent-continent collisional tectonics that culminated between c. 1200 Ma and 1100 Ma (Lambert, 2013).

The final convergent/collisional stages are referred to as the Namaqua Orogeny and are thought to be dominated by early north-verging folding and thrusting followed by oblique trans-current shearing as a consequence of southwest-directed indentor tectonics. Subsequent deformation during the Neoproterozoic Pan African orogenic event is believed to have only affected the West Coast Belt.

Based on variations in depositional environments and metamorphic grade, the NNMP has been subdivided into various terranes and sub-provinces, separated by major structural breaks. The ages of structures of the purported terranes are, however, similar and both the presence and the significance of supposedly terrane-bounding faults remain controversial.

The presently accepted subdivision of the NNMP includes, from west to east, the Richtersveld Sub-province, Bushmanland Sub-province, Kakamas, Areachap and Kaaien Terranes (Lambert, 2013).

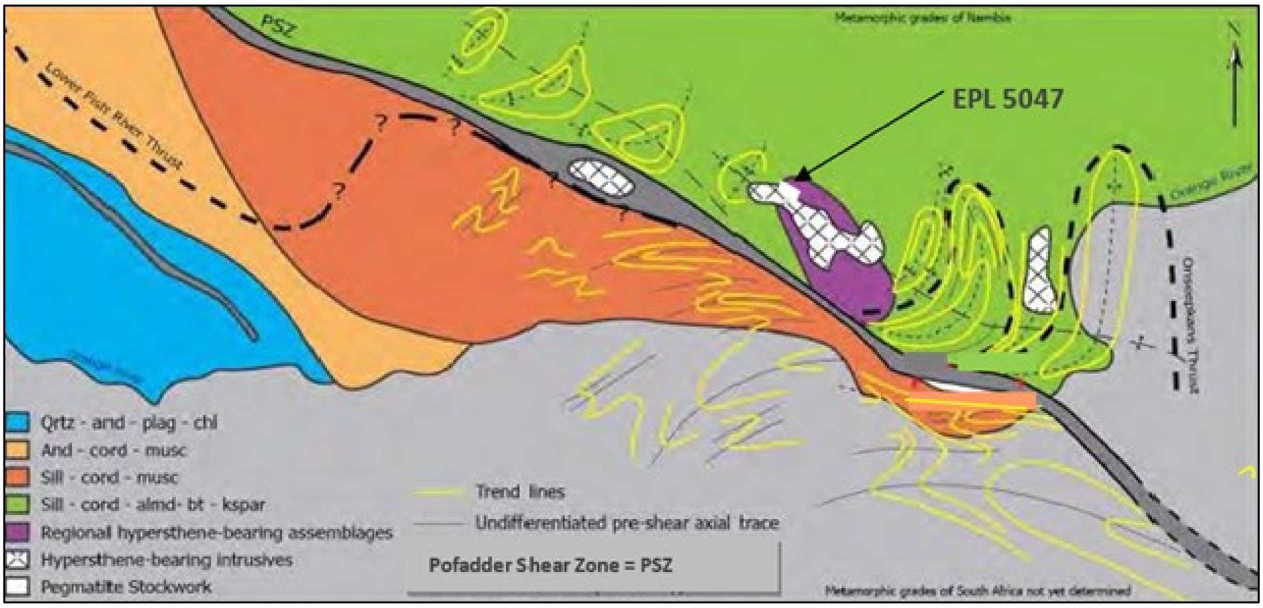
EPL 5047 falls exclusively in the Richtersveld Sub-province.

3.1.1 Richtersveld sub-province

The Richtersveld Sub-province represents a Palaeoproterozoic (1700–2000 Ma) block within the NNMP that largely escaped Mesoproterozoic reworking, experiencing only low-grade to medium-grade (greenschist-facies) metamorphism in its centre. Metamorphic grades and the extent of the Namaquan overprint increase eastwards (Figure 3.2) to reach amphibolite-facies grades that were attained at c. 1200 Ma.

The sub-province is made up of c. 2000 Ma volcano-sedimentary successions that were intruded by voluminous granite and granodiorite between 1730 Ma and 1900 Ma interpreted to represent the relics of a Palaeoproterozoic island arc. The stratigraphic subdivision is highly debated with models largely based on age correlations of units across shears and the contentious existence of bounding shear-zones separating the sub-province from the other terranes. The structural ambiguity has led to further subdivision of the sub-province into smaller lithostratigraphic terranes and/or incorporation of the sub-province into the Bushmanland Sub-province (Lambert, 2013).

Figure 3.2 Structural and metamorphic map of the eastern parts of the Richtersveld sub-province in the vicinity of the Pofadder Shear Zone, illustrating the progressive increase in regional metamorphic grade from west to east (from Lambert, 2013)



Source: Arcadia Resources June 2021 Prospectus

3.1.2 Pegmatite belt

The mainly transcurrent late-stage shearing and un-roofing of the NNMP was accompanied by the emplacement of late-stage granites and the development of regionally widespread pegmatites throughout the NNMP and across terrain boundaries. A very close association of the Pofadder Shear Zone (PSZ) exists with the pegmatite belt. The north-westerly trending PSZ intersects the broadly undulating, easterly trending belt in its southern portion.

In the Northern Cape Province of South Africa and the southern Karas Region of Namibia, the pegmatites form an extensive 16 km wide, c. 450 km long, continuous west-east trending belt extending from Vioolsdrif to Kenhardt in South Africa. The extent of the belt in Namibia is not well documented but is proposed to extend as far as Ai-Ais.

The pegmatites mainly occur as several 100 m long and up to 20 m wide, lenticular to sheet-like bodies with the majority occurring concordant to the regional fabric and a few as smaller discordant bodies. The pegmatites vary in composition and internal structure, ranging from simple, homogeneous and un-zoned quartz-feldspar-muscovite-bearing assemblages to complexly zoned, heterogeneous bodies containing more exotic minerals such as beryl, lepidolite, columbite-tantalum, sillimanite, together with uranium and rare earth element (REE)-bearing minerals.

The structural setting of the belt is not yet well constrained, and the belt has previously been correlated with tectonostratigraphic boundaries such as the Groothoek thrust and the Southern Front. The emplacement of the pegmatite belt is considered to have occurred between c. 1025 Ma and 945 Ma.

Older generations of pegmatites have, however, been dated at 1104 Ma in the Prieska region but are related to earlier metamorphic phases. Detailed studies on pegmatites within the belt have been focused on their economic potential in the past.

Regional fabrics surrounding the PSZ have been well documented in numerous studies that distinguishes six (D1–D6) different phases of deformation. The D5 and D6 episodes relate to deformation along the PSZ. Differences in the nomenclature between the terminologies relate to the recognition of the progressive nature of deformation events, particularly shearing associated with the PSZ. Deformation stages D1 – D3 are associated with regional deformation events in the Bushmanland and Gordonia Sub-provinces, whereas the D4 deformation is related to deformation along the PSZ and exclusively to the structures associated with the PSZ.

There are clear overprinting relationships from earlier amphibolite-grade and ductile to greenschist-facies and more brittle fabrics, indicating that deformation occurred under progressively lower-grade conditions during a prolonged period of exhumation. Hence, D4 fabrics and structures describe a polyphase deformation history related to progressive shearing along the PSZ. The largely co-axial nature of high-grade and lower-grade planar and linear fabrics indicates the progressive nature of the deformation. Based on overprinting relationships, mineral assemblages and deformation textures of the D4 event have been subdivided in this study into separate stages, representing the progressive evolution of the shear-zone and related fabrics.

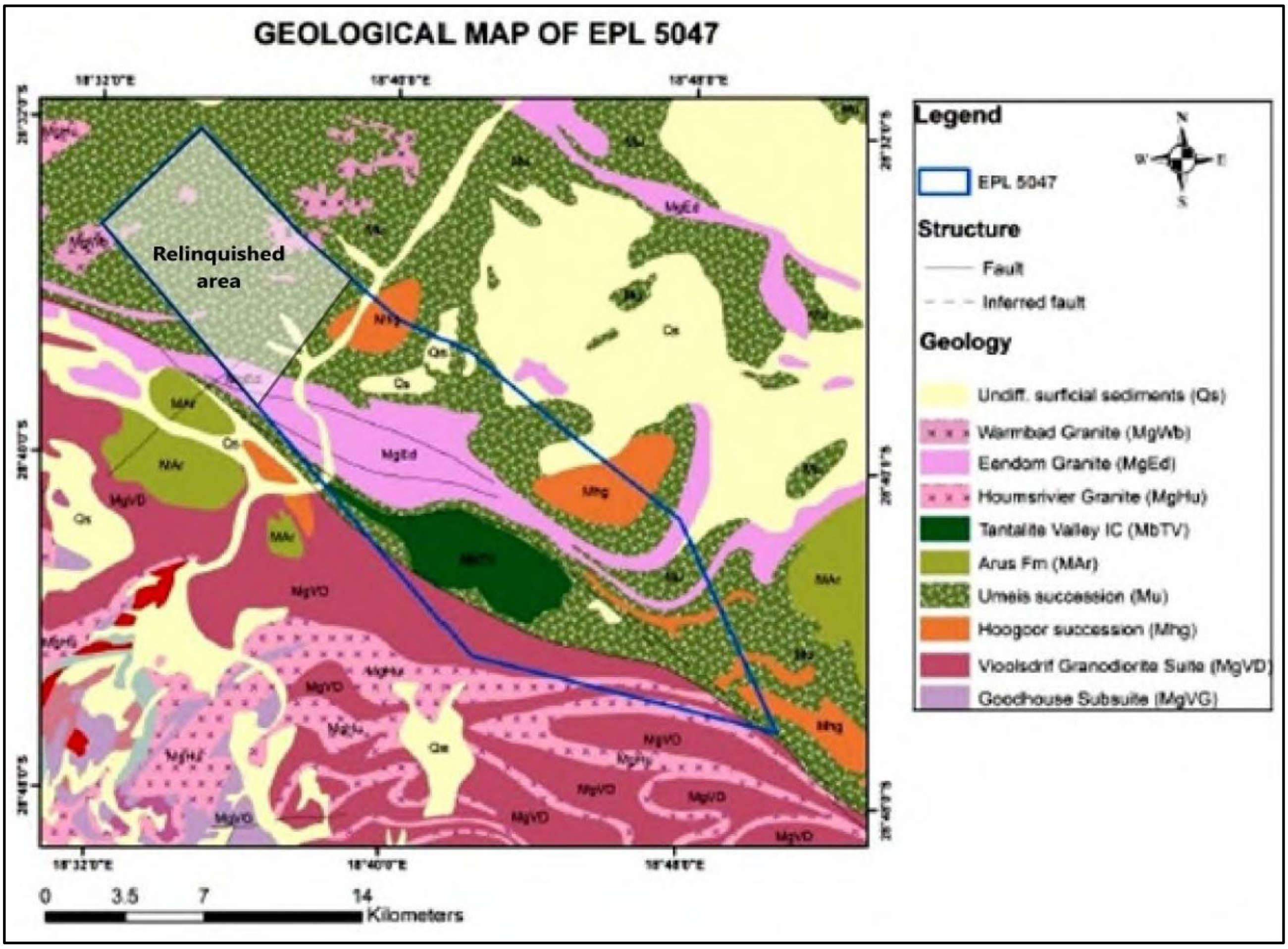
3.2 Local geology

The area of EPL 5047 is underlain by rocks of the NNMP with the lithology of EPL 5047 comprising units from the Gordonia Sub-province, which is separated from the Richterveld Sub-province by the north-westerly trending PSZ. Although the most prominent feature of EPL 5047 is the northwest trending PSZ, numerous other structural zones can be noted with predominantly northeast and east-west trends. The host rocks comprise a volcano-sedimentary sequence intruded by a coarse-grained gabbroic rock. The main lithologies comprise volcanic rocks, chlorite schists and phyllites, all metamorphosed to varying degrees.

Numerous concordant (younger) and discordant pegmatites were intruded into these lithologies. They are aligned within the pegmatites that are associated with the PFZ and are invariably discordant to the regional schistosity of the country rock within which they are emplaced. Pinch and swells structures are associated with the pegmatites.

Figure 3.3 shows the local geology of the lease area. This figure also shows the relinquished area as described above.

Figure 3.3 Local geology of EPL 5047



Source: Arcadia Resources June 2021 Prospectus

In the Tantalite Valley area, the rocks into which the pegmatites intruded consist of basic amygdaloidal lavas, volcanic rocks, chlorite schists and phyllites, some interbedded acid volcano-sedimentary rocks (felsite, sandstone), and intrusive acid dykes, diorite to quartz diorite and metagabbro. The general strike of these lithologies is about 120° northeast. Towards the east the strike varies, due to the proximity to the large intrusive metagabbro complex.

Structurally the pegmatites are limited on the northern side by a mylonite shear zone and appear to occupy tension fractures adjacent to the zone. Mineralogically the four main constituents of the pegmatites are white to grey massive quartz, crystalline perthitic feldspar, lithian muscovite, and sugary albite. Minor constituents are spodumene, beryl, lepidolite, muscovite, apatite, fluorite, biotite, tantalite and microlite.

3.3 Deposit type

A pegmatite is defined as *"an essentially igneous rock, commonly of granitic composition, that is distinguished from other igneous rocks by its extremely coarse but variable grain size or by an abundance of crystals with skeletal, graphic, or other strongly directional growth habits. Pegmatites occur as sharply bounded homogenous to zoned bodies within igneous or metamorphic host rocks."* (London, 2008).

Pegmatites are defined by a number of geological, textural, mineralogical and geochemical parameters, and are broadly classified as either simple/common or complex based on the presence or absence of internal zonation. Simple/common pegmatites are un-zoned, poorly fractionated and thus usually unmineralised. Complex pegmatites often contain potentially economic concentrations of mineral/elements (including lithium, tantalum, niobium, tin, beryllium, and REE).

According to Simmons (2021), the Černý's (1991) classification scheme is the most widely used classification of pegmatites today. His classification is a combination of depth of emplacement, metamorphic grade and minor element content, and it has four main categories, namely Abyssal (high grade, high to low pressure), Muscovite (high pressure, lower temperature), Rare-Element (low temperature and pressure), and Miarolitic (shallow level).

The Rare-Element classes are subdivided based on composition into three broad families based on other petrological, paragenetic and geochemical data:

- **L**ithium-**C**aesium-**T**antalum (LCT)
- **N**iobium-**Y**ttrium-**F**luorine (NYF)
- **Mixed** LCT – NYF families.

It should be noted that pegmatites often occur as a combination/hybrid of the subtypes listed but with one or two of the minerals dominating over the other(s).

Simmons (2021) points out that attempts to relate pegmatite types or subtypes to magma genesis or tectonic regimes as has been attempted in granite classifications are not satisfactory also that the classification fails to address the possibility of pegmatites forming by direct anatexis.

Rare-element pegmatites are often intruded into metamorphic rocks where the peak metamorphic conditions attained are upper greenschist to amphibolite facies (London, 2008) and have temporal and spatial associations with granitic plutons. Most pegmatites occur in swarms or pegmatite fields and occupy areas ranging from tens to hundreds of square kilometres; they may be associated with a discrete granite source around which they are systematically distributed, from the least fractionated granite to the most highly evolved pegmatites are the greatest distance from the granite source (London, 2008); however, this is not always the case. The possibility of pegmatites forming by direct anatexis of the host rock should also be considered.

With increasing fractionation, there is also often an increase in the complexity of the internal pegmatite zonation. The most highly evolved distal pegmatites are usually the most complexly zoned and associated with potentially economic concentrations of the elements and associated minerals identified above.

Pegmatites may vary from a few metres to hundreds of metres in length with variable widths ranging from <1 m to tens of metres wide and may have simple to complex internal structure. A number of different internal units may be present within a pegmatite based on differences in mineral assemblage, modes and textures. These may include zones of primary crystallisation forming more or less concentric shells (asymmetric zonation also common), complete or incomplete, from the margin inwards; replacement bodies formed at the expense of pre-existing units with or without lithologic and/or structural control; and fracture fillings associated with primary zones or replacement units.

The main rock forming minerals in a granitic pegmatite include feldspar, mica (muscovite and biotite) and feldspar. Other minerals may occur in economic concentrations and include, but not limited, to various lithium minerals, beryl, tourmaline, cassiterite, coltan, topaz, garnet and various rare-earth minerals.

The Tantalite Valley pegmatites belong to the LCT family of pegmatites and can be classified as a mixture of the spodumene, lepidolite and albite-spodumene subtypes of complex type, lithium subclass, rare-element class pegmatites.

The pegmatites in the project area are not zoned, with the exception of isolated instances, and are banded to massive, are dominated by quartz, sugary albite and muscovite, and exhibit variable concentrations of tantalite, spodumene and lepidolite. Other minerals have been recognised in the core and in outcrops.

4 HISTORICAL EXPLORATION ACTIVITIES

Tantalum mineralisation has been known to occur in the area since the 1940s, and there is abundant evidence of historical extraction of economic minerals from pegmatites on EPL 5047, although no production figures exist. The remains of permanent structures such as personnel accommodation and a processing plant is still evident. The Namibian Ministry of Mines reports workings here as far back as 1984.

Literature and previous exploration activities also refer to historic tungsten/scheelite mining that took place within EPL 5047.

4.1 Previous exploration

Swanson Enterprises held various claims on the farms Kinderzit and Umeis on EPL 5047 and mined tantalite, beryl, spodumene and tungsten on these claims in the 1970s to early 1990s. The primary mining was for tantalum that took place on several shallow dipping pegmatites in the north-western strain shadow of the Tantalite Valley Complex (coinciding with the area identified by ORP).

In 1980, Southern Sphere Mapping drilled 168 percussion holes to investigate several pegmatites at Tantalite Valley. The tantalum-lithium pegmatite deposits on ML 77 are currently being mined by AIM-listed Kazera Global PLC.

4.1.1 Placer Development Ltd exploration programme

Following a field visit in March 1981, Placer Development Ltd (Placer), a Canadian company, initiated mapping and sampling exploration activities on the properties.

In August 1981, Placer reported on these activities. The pegmatites had been named A to G from west to east, and 91 samples had been taken. Placer noted that the northerly extent of the pegmatites was marked by a mylonitic shear zone and speculated that the pegmatites occupied tension fractures developed adjacent to the shear. The strike of the pegmatites is northeast-southwest, the dip averaged 15–20° to the southeast, and in the area of interest the pegmatite bodies averaged between 1 m and 3 m thick.

Placer noted two modes of tantalite occurrence:

- As medium to coarse grained crystals, associated specifically with spodumene, lepidolite, quartz and perthitic feldspar (rare)
- As very fine-grained acicular crystals, associated with albite-rich parts of the pegmatite.

Placer noted that the B2 pegmatite (known as the Witkop pegmatite), was the only one that showed distinct zoning. C1 and D4 showed possible zoning. All the pegmatites have a “ribbony or banded” appearance.

Of importance to this estimate of Mineral Resources, Placer noted that the pegmatites were more continuous and less irregular where they intruded into amygdaloidal lavas, schists and phyllites, and were more irregular where they intruded into acid volcano-sedimentary lithologies.

Four bulk samples were taken; from the B2, C2, D1 and A2 pegmatites from selected chip sample points with 3 to 5 tonnes of material obtained by drilling and blasting. From this material, a sample was obtained (every 10th shovel).

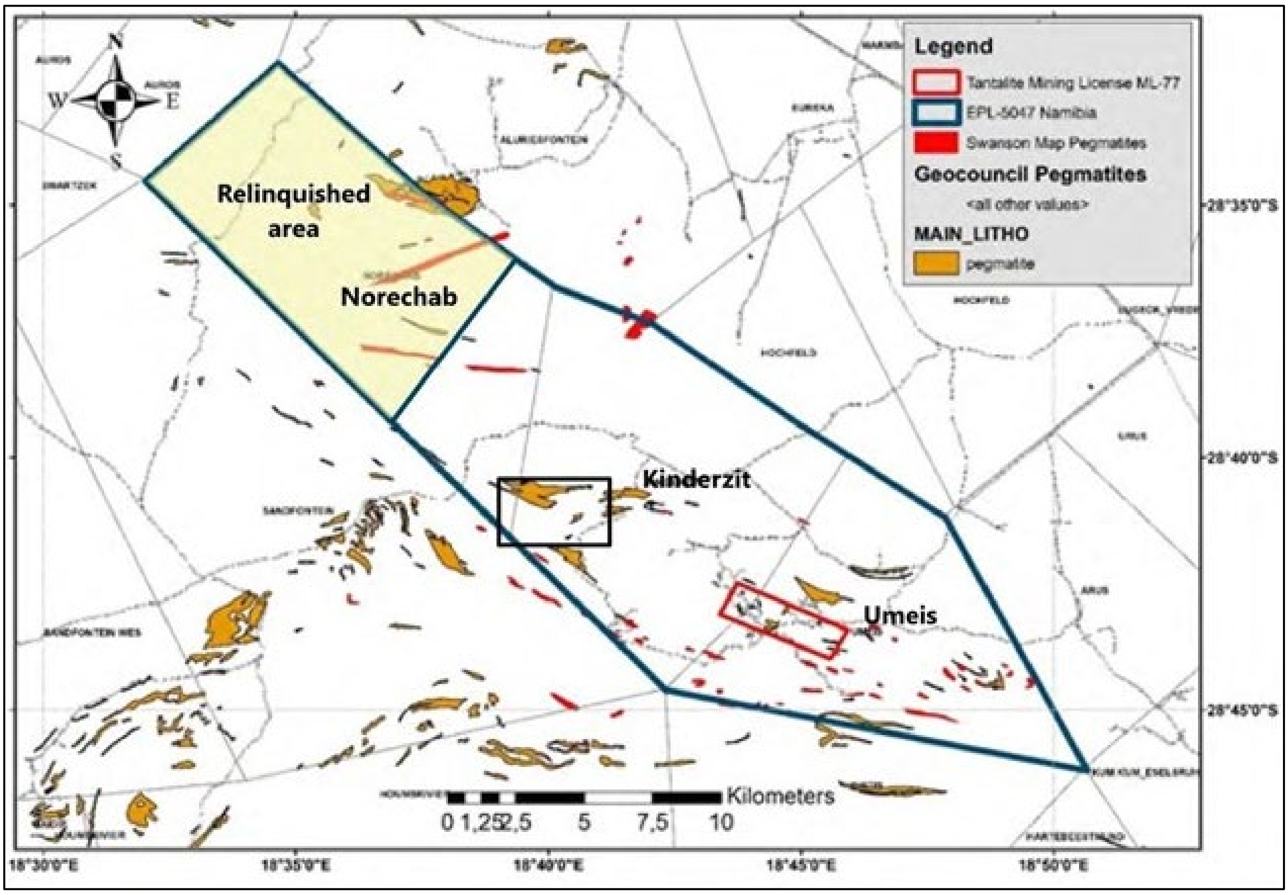
The programme concluded that the bulk of tantalum mineralisation is disseminated and occurs as small crystals, averaging <1.0 mm. The larger crystals (1–3 cm) are rare and only occur locally, with the Ta_2O_5 grade and the Ta_2O_5: Nb_2O_5 ratio increasing from west to east.

Placer identified “possible reserves” in the seven pegmatites of 2.5 Mt at 299 ppm Ta_2O_5, at a zero ppm Ta_2O_5 cut-off. This reduced to 0.9 Mt at 467 ppm Ta_2O_5, at a 300 ppm Ta_2O_5 cut-off. The highest Ta_2O_5 grades were found in the D, E and F pegmatites.

4.1.2 Geological Survey of Namibia investigation

Although substantial historical reports are available for the area, the only additional work during more recent times was done by the Geological Survey of Namibia in collaboration with the Council of Geoscience of South Africa. This was done as a five year (2012–2017), detailed mapping programme (1:50,000 scale) conducted over large parts of Southern Namibia. The mapping included EPL 5047, thereby providing detailed information of all the pegmatites that are present on EPL 5047 (Figure 4.1).

Figure 4.1 Mapping conducted by the Geological Survey of Namibia



Source: Arcadia Resources June 2021 Prospectus

The geological database (ArcMap™ shape files) was purchased by ORP from the Geological Survey of Namibia and was subsequently re-interpreted by the company principal geologist, Philip le Roux.

5 EXPLORATION

At least fifteen individual pegmatite bodies >1 m thick within the Swanson Pegmatite Swarm were identified and targeted for additional mapping and sampling. This area was delineated, and a high-resolution drone survey was undertaken to assist with the planning and mapping of these pegmatites.

5.1 Geological mapping

Recent geological mapping was conducted by the Geological Survey of Namibia in collaboration with the Council of Geoscience of South Africa. This was done as a five year (2012–2017) detailed mapping programme (1:50,000 scale) conducted over large parts of Southern Namibia. The mapping included EPL 5047, thereby providing detailed information of all the pegmatites that are present on EPL 5047.

The geological database (ArcMap™ shape files) was purchase by ORP from the Geological Survey of Namibia and was subsequently re-interpreted by the company principal geologist Philip le Roux. Based on this analysis it was decided that exploration efforts will be focussed at two high priority areas that were identified from the Geological Survey of Namibia data.

- North-western strain shadow of the mafic to ultramafic Tantalite Valley Complex (referred to as a "very high potential" area), also referred to as the Swanson prospect
- The Tantalite Valley Complex (referred to as "high potential" in the previous map), also referred to as the Complex prospect.

The exploration work by ORP focusses exclusively on the north-westerly strain shadow of the Tantalite Valley Complex. This area is referred to as the Swanson Pegmatite Swarm. Additional exploration work is still outstanding on the other target areas.

This report describes the geology and exploration results in this high potential area, with particular reference to the Mineral Resources which have been identified on the D and F pegmatites.

5.2 Channel and chip sampling

5.2.1 Placer (1981)

After establishing the sampling site, Placer cut chips continuously at right angles to the pegmatite. Pegmatites less than 3 m thick were covered by one sample, while those greater than 3 m thick were sampled over 2 m thicknesses. A total of 189 m of sample over 91 samples were cut in this way, with the average sample weight being 14.22 kg.

The Placer sample localities are visible in the field.

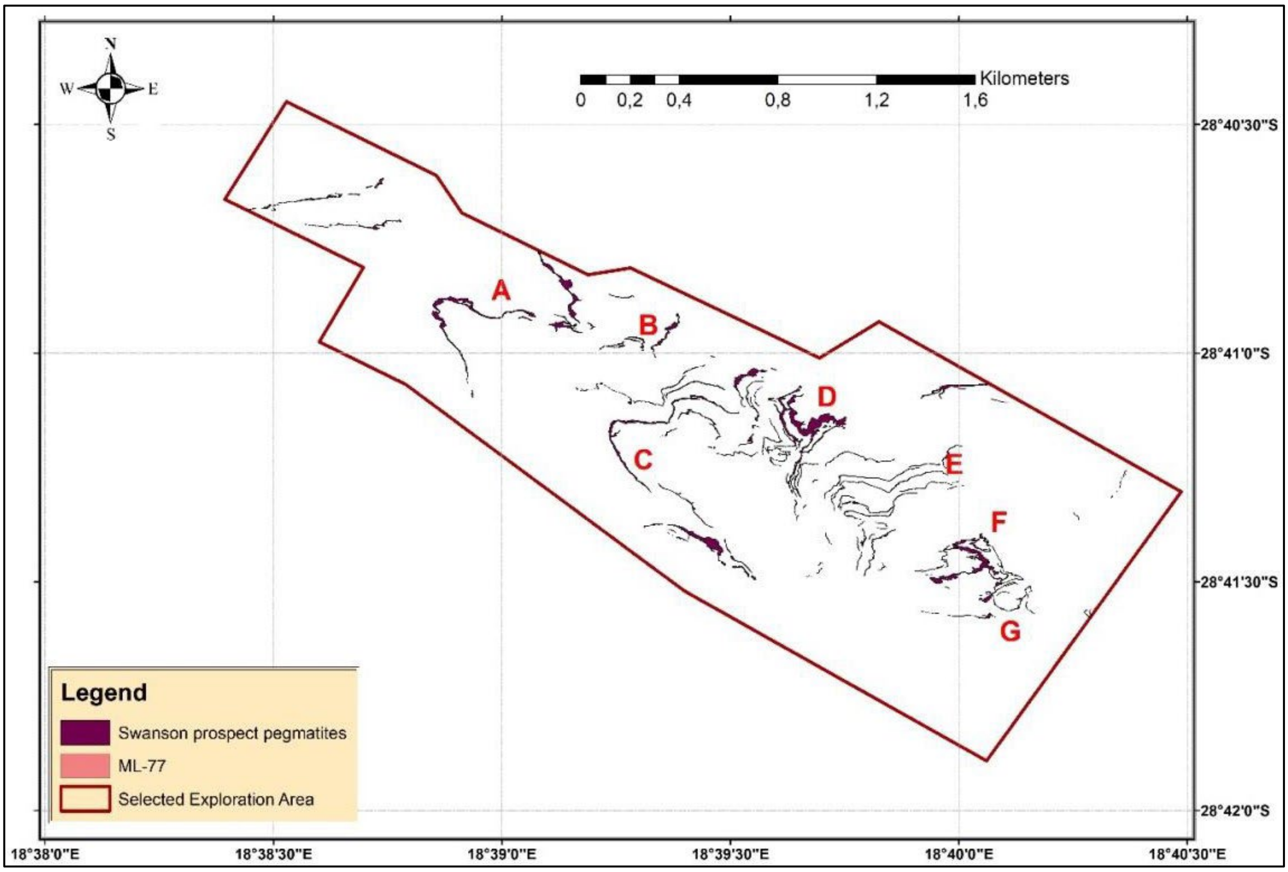
5.2.2 ORP 2019 campaign

A total of 15 of the previously sampled pegmatites (+1 m thick) were targeted for additional, more detailed, mapping and sampling. This area was delineated, and a high-resolution drone survey was undertaken to assist with the planning and mapping of these pegmatites.

The pegmatite units were clustered and named "A" to "F" in a west to east direction as shown in Figure 5.1. A total of 283 samples (204 channel and 79 chip) were taken in all pegmatites. The resources in this report are focused on the D and F pegmatite clusters, where the following channel and chip samples were taken.

- D1 Pegmatite: 77 samples (17 channel and 60 chip)
- D2 Pegmatite: 11 samples (10 channel and one chip)
- F1 Pegmatite: 75 samples (67 channel and eight chip).

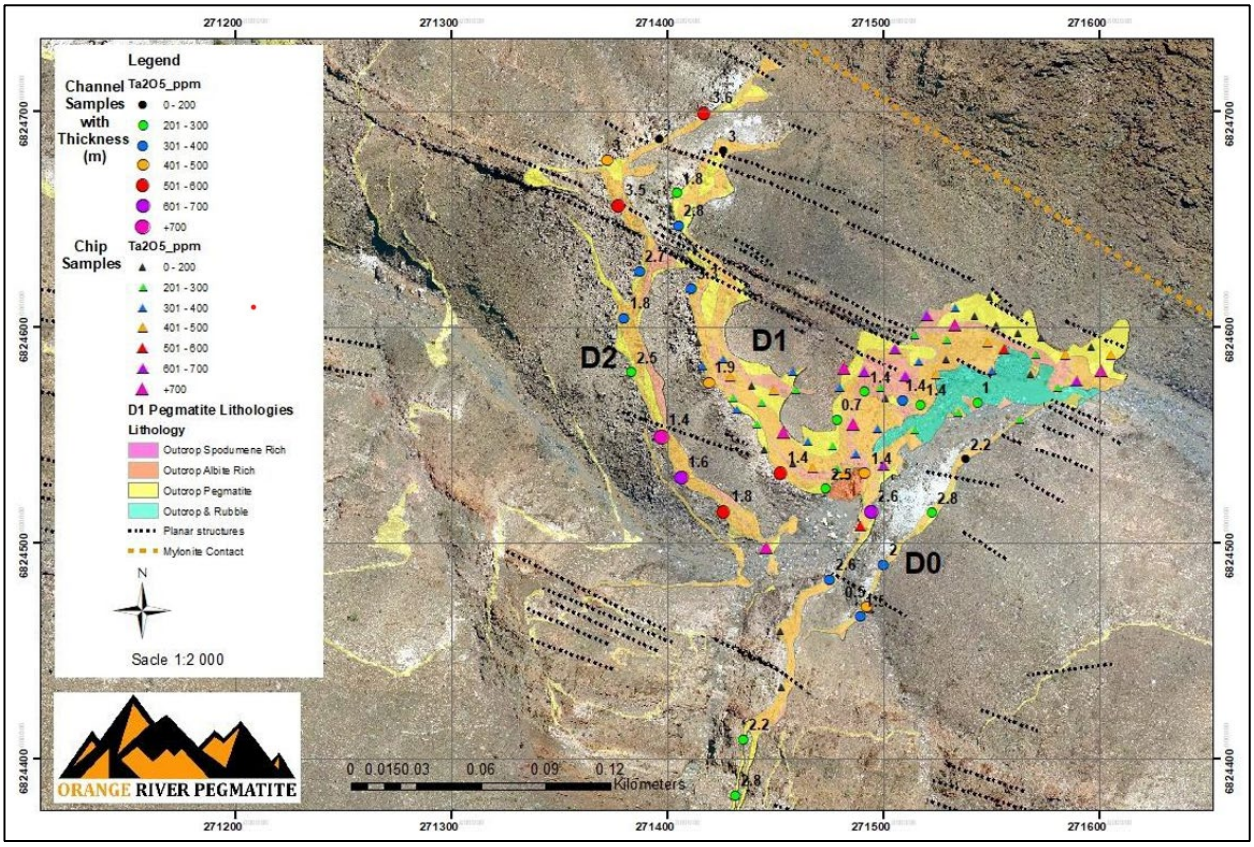
Figure 5.1 Swanson Pegmatite Swarm area targeted for the exploration campaign



Source: Creo Design, Independent Geological Report on the Tantalum and Lithium Mineralization within EPL 5047

Outcrop positions of the D and F pegmatites are shown respectively in Figure 5.2 and Figure 5.4.

Figure 5.2 Outcrop positions of D0, D1 and D2 pegmatites showing channel and chip samples



Source: Creo Design, Independent Geological Report on the Tantalum and Lithium Mineralization within EPL 5047

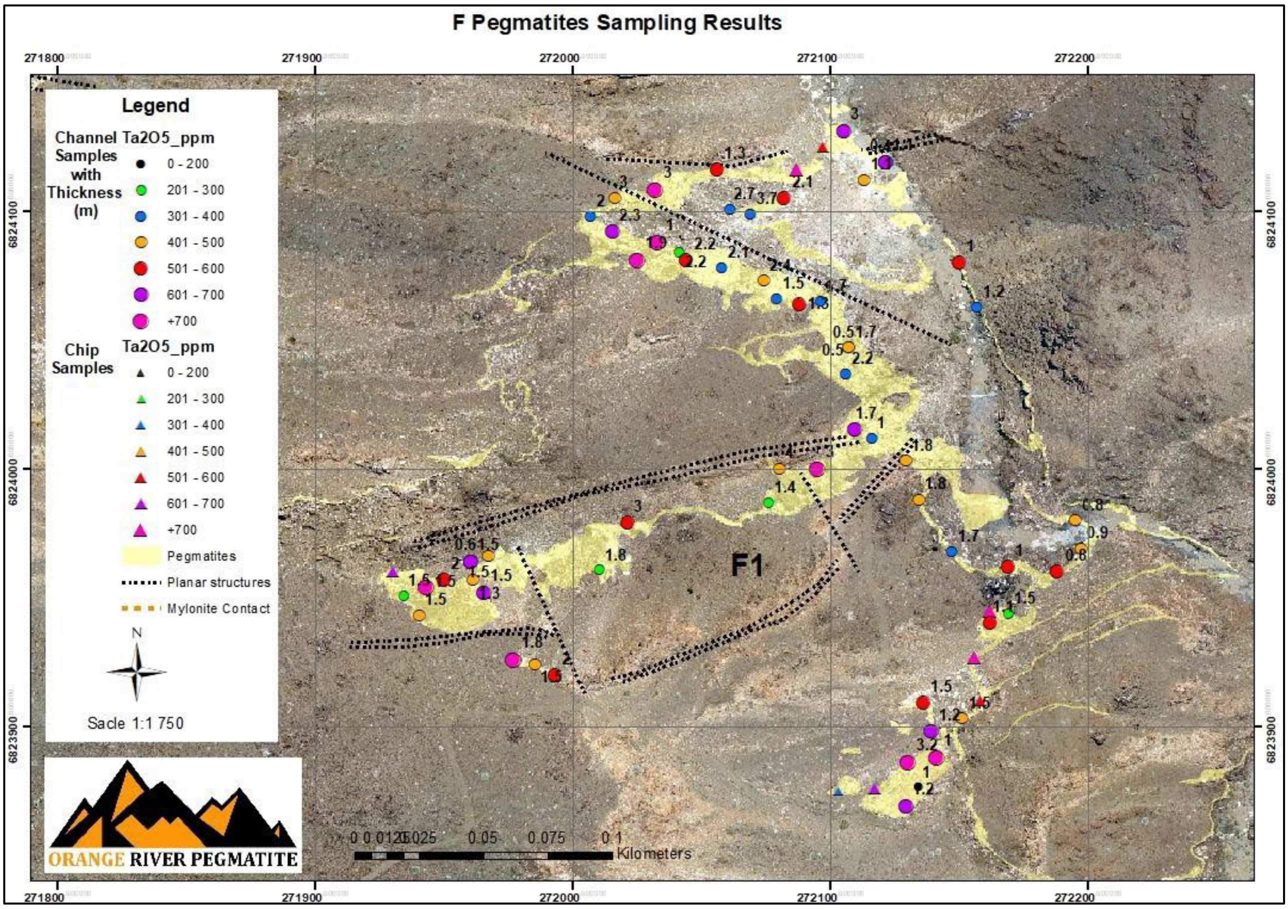
Figure 5.3 shows the D0 outcrop clearly showing purplish-coloured spodumene crystals.

Figure 5.3 An example of mineralised D0 pegmatite clearly showing the spodumene crystals

Source: Creo Design, Independent Geological Report on the Tantalum and Lithium Mineralization within EPL 5047

Figure 5.4 shows the F1 Pegmatite outcrop distribution within the identified high priority exploration area. The location of surface elevation contours, pegmatite outcrops, channel samples, chip samples, field duplicate samples, and several other features are shown in this figure.

Figure 5.4 Outcrop distribution of the F pegmatite showing channel and chip samples



Source: Creo Design, Independent Geological Report on the Tantalum and Lithium Mineralization within EPL 5047

Drilling

ORP's first drilling phase of 23 vertical diamond drill holes comprising 349.85 m of HQ (63.5 mm core) commenced in June 2020 and was completed in August 2020. Drilling was limited to pegmatites The holes were drilled at two locations targeting three pegmatites (D1, D2 and F1) with drilling sections spaced 50 m apart with a 50 m strike spacing on drill lines.

Most of the 23 boreholes drilled during Phase 1 intersected the target pegmatite bodies with only one hole at F1 that was drilled as a confirmation hole did not intersect a pegmatite body and another that stopped short of the D2 body due to excessive water loss.

A total of 112 samples based on lithological logging of the core were taken. The average thickness from the drilling of the F1 pegmatite is 2.1 m, of the D1 pegmatite is 4.27 m, and of the D2 pegmatite is 4.50 m, all markedly thicker than that measured in outcrop.

A marked increase in true thickness of some 10% for the F1 pegmatites and 100% for and 86% for the D1 and D2 pegmatite respectively was observed from the drilling results. The whole pegmatite intersection was used for thickness and grade calculations. No cut-off grade was applied.

5.2.3 ORP 2021 campaign

From mid- to late 2021, twenty-nine additional boreholes were drilled at the Swanson Deposit with a combined depth of 1219.07 m. Twenty-six of these holes were drilled in the E Area, between the D Area to the northwest and the F Area to the southeast. The other three holes were drilled on the down-dip side of the D Pegmatites, to better delineate their sub-surface extension.

All boreholes drilled during this campaign were vertically oriented, with HQ (63.5 mm) core diameters. Drilling was not conducted on a regular grid but drill spacing was in the order of 50 to 70 m. Only three holes were drilled deeper than 60 m (92.52 m, 121.04 m and 134.81 m, respectively). The average depth of the rest of the holes was 33.49 m, and mainly targeted the upper E pegmatites, as well as the F1 Pegmatite.

Additional channel samples were also collected during this time, which also included previously unsampled pegmatites such as E1, D3 and D4.

5.2.4 ORP 2021/2022 campaign

From August 2021 to January 2022, twenty-nine additional diamond drill holes were drilled at the Swanson Deposit with a combined depth of 1 219.07 m. Twenty-six of these holes were drilled in the E Area, between the D Area to the northwest and the F Area to the southeast. The other three holes were drilled on the down-dip side of the D Pegmatites, to better delineate their sub-surface extension.

6 DATA QUALITY

6.1 Input data

6.1.1 Channel sampling

With the low angle dips of the pegmatites, vertical to semi-vertical outcrops were readily available, with the cutting of a channel sample using a diamond blade grinder being the preferred sampling method. The sample position will first be marked on the side-wall, ensuring that the sample includes both the top and bottom contacts and the sampling team then cut a slit in the sidewall from the top to the bottom contacts. Material was then chiselled continuously from top to bottom to complete the sample. Although a continuous channel sample was always the first option, it was, at times, necessary to combine this method with chip samples in places where the nature of the outcrops would require this, i.e. when the pegmatite does not outcrop continuously and material is broken and fractured etc.

6.1.2 Pegmatite sampling procedures

Each pegmatite was assigned a unique pegmatite group and ID. Groups A to F (e.g., pegmatites A1, A2. E1, E2, E3 to F).

Each pegmatite's preferred sample spacing was predetermined, i.e., 50 m, 25 m, 20 m, 15 m along strike, depending on its unique exploration priority rating.

Channel samples were marked by the field geologist on exposed faces with spray paint along strike. The top to bottom channel was marked out with the field ID written next to it (e.g., E3_19). The marked sample coordinate was recorded in WGS84 UTM 34S coordinates with a handheld Garmin global positioning system (GPS). Faces with exposed true thicknesses of the pegmatites were targeted where possible. Where the true thickness of the pegmatite faces was not well exposed chip sample circles were marked.

The four-person sampling team then proceed to the marked sample locality and collect the sample material with a set of electric diamond blade grinders and hammers and chisels, along the spray paint markings. The sampling team was instructed to collect equal weight batches of material from all portions of their marked face so as not to bias the sample with any preferred internal pegmatite horizon. The sampling team was instructed to collect between 6 kg and 14 kg of material, depending on the relative grain size and width of the pegmatite face being sampled. Finer-grained material (such as dominantly sugary albite textured pegmatites) and shorter pegmatite widths would yield smaller sample weights, while coarser material (such as dominantly blocky quartz and feldspar textured pegmatite) and longer widths would yield larger sample weights. The sampling team was instructed to record the following information per collected sample locality:

- Marked sample field ID (e.g., E3_19)
- Sample type (e.g., Chip, Channel or Chip and Channel)
- Sampled channel width (e.g., 220 cm, top to bottom, N/A for Chip samples)
- Sample weight (e.g., 9.5 kg)
- Comments (e.g., problems encountered).

6.1.3 Chip sampling

Chip samples were taken where non-continuous or broken pegmatite outcrops were present. Chip sampling of fresh, in situ, material was selected, ensuring that the individual samples were as continuous as possible, representative and includes all the type and texture of material present at the locality.

In areas where flat-lying pegmatites were absent a different approach had to be utilised as a vertical sample from top to bottom of the pegmatite was not possible. In cases where this situation prevailed, a grid of chip samples was taken over the outcropping area. This was combined as much as possible with channel samples on the edges when possible.

6.1.4 Spodumene crystal sampling

Spodumene crystal sampling was primarily undertaken during the reconnaissance programme when the collecting of lithium data was necessary to obtain values on the lithium content of spodumene crystals that are present in the pegmatites. Samples were collected by hand at localities where spodumene crystals were present. This was not done on a prescribed grid or sample interval. Samples were represented by clean spodumene material, without any matrix or contaminant minerals.

6.2 Data validation, quality assurance and quality control

Quality assurance/quality control (QAQC) samples consisting of blanks and certified reference materials (CRMs) were regularly inserted in the sampling stream at random positions, with the aim of obtaining 10–15% of QAQC sample inclusion into the total pegmatite sample population.

Three field duplicate samples of channel samples F1_3, F1_25 and F1_37 were collected on the F pegmatite. The field duplicate samples were collected with the aim of testing vertical Ta_2O_5 grade variability within the original channel sample and to test the precision of the channel sampling method at marked sampling sites on the F pegmatite. The field duplicate sample material was collected according to the standard channel sampling procedure employed on site, and only on areas where sample material was previously collected for the original channel sample. The material collected for the field duplicate samples is considered to be identical to that of the original sample, however, have subsequently been separated into an Upper, Middle and Lower portion. The Upper portion represents the top third of the exposed pegmatite face, the Middle portion the central third and the Lower portion the bottom third. The Upper, Middle and Lower portions were sampled separately at each original channel sample location. All samples have been collected where true pegmatite thickness is vertically exposed.

From sampling the Upper, Middle and Lower sections, the tantalite is evenly distributed throughout the pegmatite and no part of the pegmatite has a preference with regards to tantalite mineralisation.

6.3 Sample preparation

ORP maintained strict chain-of-custody procedures during all segments of sample handling and transport. Samples prepared for transport to the laboratory were bagged and labelled in a manner which prevents tampering. Samples also remain in ORP's control until they are delivered and released to the laboratory. The samples were exported from Namibia to South Africa and export permits for each batch of samples were obtained from the Ministry of Mines and Energy in Namibia and all customs clearance was obtained for both countries.

At Scientific Services (laboratory based in Cape Town, South Africa) the sample laboratory list is checked against the samples received and Scientific Services then took custody of the samples after all samples which were marked on a sample registration list.

At the laboratory the samples were weighed before being crushed in a Boyd Crusher set at 2 mm. A subsample of 100 g of the crushed material was split off in a riffle splitter and this material was then milled in a carbon milling pot to 90% passing 75 micron.

Of the milled material 0.25 g sample was weighed directly into microwave vessels equipped with a controlled pressure release mechanism. Nitric acid (HNO_3) and hydrofluoric acid (HF) were added before the vessel was sealed and placed in the microwave system. At the end of the microwave process, the vessels were allowed to cool before removing them from the microwave system. Boric acid for HF neutralisation was then added after digestion transfer and make up to volume for inductively coupled plasma-optical emission spectroscopy (ICP-OES) analysis. The instrument was calibrated, and samples measured against standards. The concentrations determined were reported on the basis of the actual weight measured.

Retained samples including duplicate and reject material and pulps were collected by ORP from the laboratory after acceptance of QAQC and were then securely stored in a storage facility.

6.4 Data management

The ORP exploration geologist was responsible for the collating, validating recording and distributing information on site. This responsibility included:

- Checking of field data for errors and validity
- Importing of data into Microsoft Excel
- Checking and importing analytical results from the laboratory.
- Filling and distributing of information
- Processing data
- Backing up of data.

The database was structured in a format suitable for importing into ArcGIS and three-dimensional (3D) modelling software. The data was then sent to the ORP offices where the data was plotted in ArcGIS to verify the sample locations in relationship to the drone survey results. The laboratory results were also double checked, and QAQC analyses done on the results. Creo Design is of the opinion that the electronic database supports the field data in almost all aspects and suggests that the database can be used for resource estimation.

6.5 Check assays

6.5.1 Standards

ORP added a total of 25 AMIS standards, and the laboratory added an additional nine standards to the two batches of samples. This represents 10.6% standards that were added to the 234 core samples. Table 6.1 shows details of material type, source and accepted grades (medium) and two standard deviations (low, and high) for the various standards. In all cases, the analysed values for all three elements of interest (tantalum, niobium, lithium) fall within two standard deviations (Table 6.1).

6.5.2 Blanks

A total of 17 blanks AMIS0439 (Blank Silica Chips) were added to the two batches of core samples. The blanks were added at the start of each batch as well as at the start samples of a new pegmatite. This represents 7.2% of the total number of samples. All the blanks reported were below the detection limited for both tantalum and niobium (<10 ppm) and less than 0.0041% Li. The results for blanks show no serious indications of systematic cross-contamination.

Table 6.1 Standards used at ORP

Standard	Source	Number added	Element	Low	Medium	High
AMIS0339	Mount Cattlin Pegmatite	8 (I count 6?)	Li_%	2.17	2.27	2.37
			Nb_ppm	73.5	97.6	121.7
			Ta_ppm	266	310	354
AMIS0340 (0341?)	Mount Cattlin Pegmatite	1 (6?)	Li_%	1.273	1.43	1.587
			Nb_ppm	2252	2510	2252
			Ta_ppm	11703	13738	15773
AMIS0342	Mount Cattlin Pegmatite	4 (12)	Li_%	0.1445	0.1612	0.1779
			Nb_ppm	40	60	80
			Ta_ppm	152	169	186
AMIS0355	Volta Grande Pegmatite	2 (0?)	Li_%	0.6432	0.7268	0.8104
			Nb_ppm	41	49	57
			Ta_ppm	172	214	256

Standard	Source	Number added	Element	Low	Medium	High
AMIS0408	Mount Cattlin Pegmatite	9 (1?)	Li_%	1.36	1.6	1.84
			Nb_ppm	13200	15200	17200
			Ta_ppm	25800	30100	34400

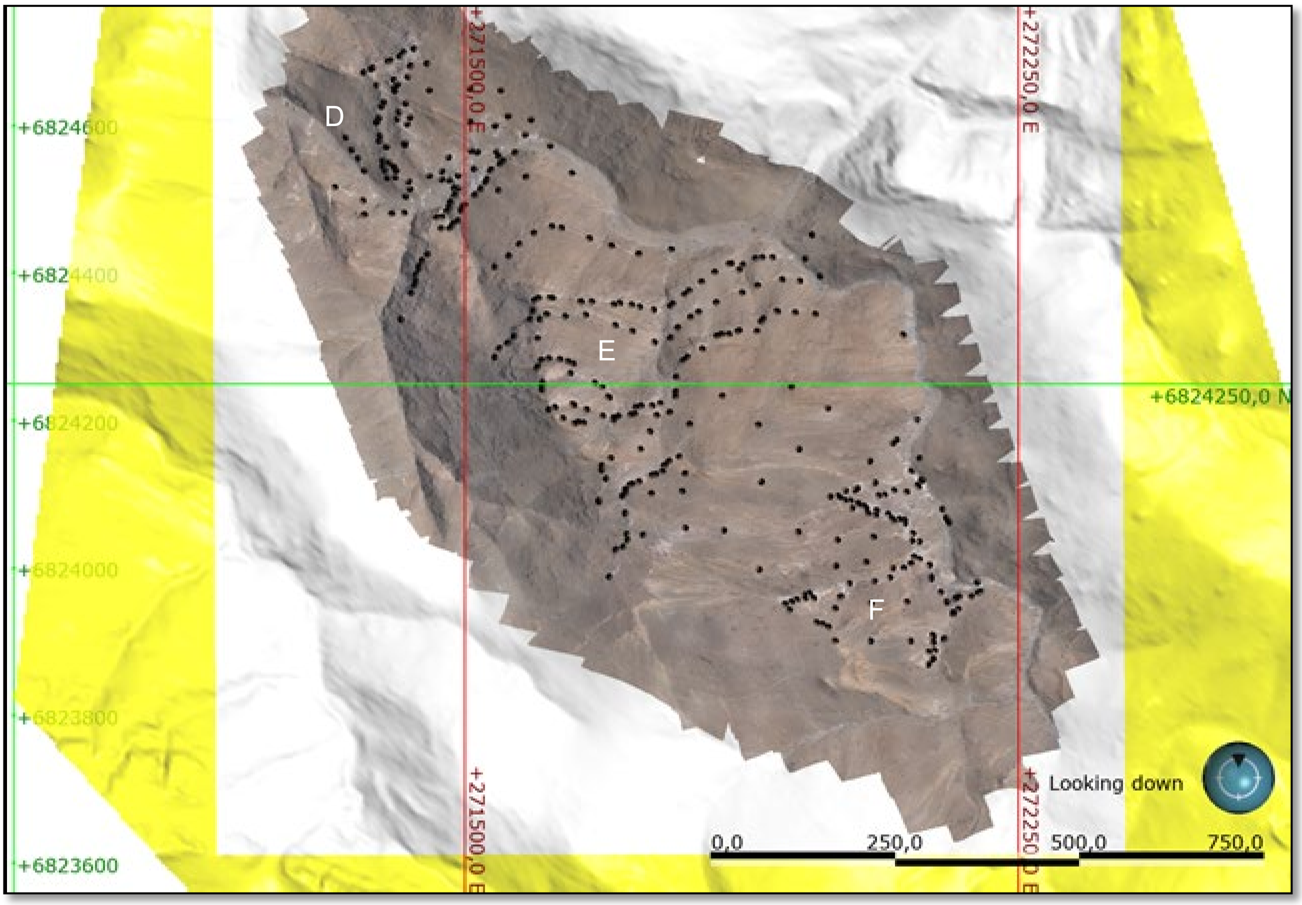
6.6 Topography and depletion surfaces

The topographic surface of the project area is shown in Figure 6.1. A more detailed topographic surface was used for the latest modelling and resource estimation, based on 1 m contour intervals of a drone survey that was carried out. Not only is the latest topographic survey more detailed than the previous version, but the elevation thereof is roughly 26 m lower than before, due to a different datum that was used. The samples (boreholes and channels) used for estimation are shown in Figure 6.1 and extend from the D Area in the northwest to the F Area in the southeast.

The vertical difference ranges from about 600 m elevation in the river at the D pegmatites, to about 750 m elevation at the E pegmatites.

A section through the D, E and F pegmatites is shown in Figure 7.1. Through studying the latest drilling, it was interpreted that E5 pegmatites is in fact an extension of the F1 pegmatite.

Figure 6.1 Project area topography showing sample positions used for estimation



Source: ORP Database, Snowden Leapfrog analysis

6.7 Bulk density

ORP determined the specific gravity (SG) of the samples by using the Archimedes principle on 147 chip samples that were collected from all six pegmatites from the targeted pegmatite swarm. The SG of each sample was calculated using the formula SG = (weight in air) / (weight in air – weight in water).

This technique measures the volume of a sample by water displacement and density is then calculated as the ratio of mass to volume. No bulk density has been measured because the SG is considered appropriate as an input into the orebody model. It was found that the 147 samples have an average SG of 2.60 g/cm^3 (Table 6.2).

Table 6.3 shows the mean and variances per pegmatite rock type, also averaging 2.60 g/cm^3.

Table 6.2 SG samples taken on the pegmatites

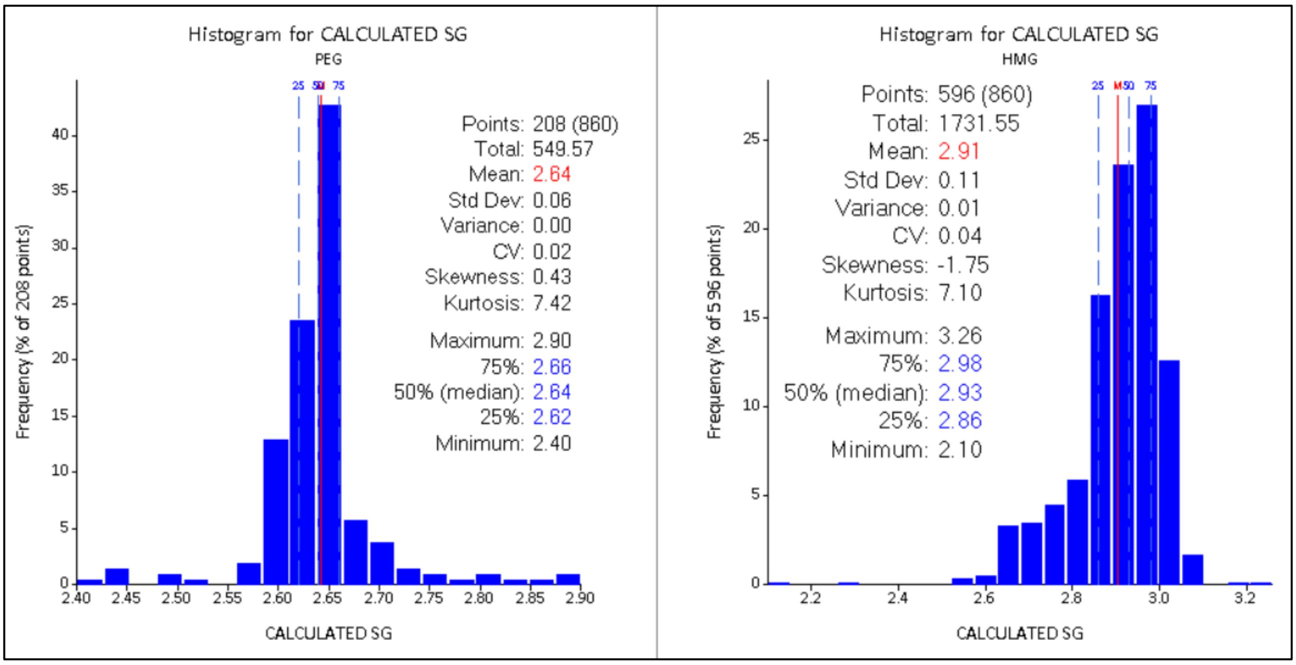
Pegmatite Swarm	No. of SG samples	Low	High	Mean
A	23	2.46	2.76	2.60
B	31	2.45	2.70	2.59
C	20	2.49	2.70	2.61
D	27	2.51	2.75	2.58
E	20	2.55	2.65	2.60
F	26	2.44	2.71	2.61
Total	**147**	**2.44**	**2.76**	**2.60**

Table 6.3 SG samples per pegmatite type

Geological unit	No. of SG samples	Low	High	Mean
Feldspar Pegmatite	35	2.44	2.76	2.60
Quartz Pegmatite	23	2.44	2.73	2.59
Albite Pegmatite	86	2.46	2.68	2.60
Spodumene Pegmatite	3	2.67	2.75	2.71
Total	**147**	**2.44**	**2.76**	**2.60**

A total of 860 pegmatite core samples (average 30cm in length), 213 form 2021 campaign and 647 from the 2022 campaign was determined using the method described above and was used during the resource modelling. The 208 pegmatite core samples yielded an average density of 2.64 g/cc, while the 596 waste samples yielded an average of 2.91 g/cc (see Figure 6.2).

Figure 6.2 Histograms of density determinations for pegmatites (left) and for waste (right)



6.8 Boreholes used in resource estimation

The boreholes used in the resource estimation are shown in Table 6.4.

Table 6.4 Boreholes used in resource estimation

HOLE ID	Pegmatite	X	Y	Z	EOH	From	To	Thickness - m	Ta_2O_5 - ppm
D1DDH01	D1PEG	271546	6824558	586	20.87	3.63	7.76	4.13	228
D1DDH01	D2PEG	271546	6824558	586	20.87	13.05	16.65	3.60	347
D1DDH01	D2PEG	271546	6824558	586	20.87	16.89	18.05	1.16	717
D1DDH02	D1PEG	271513	6824541	585	20.73	2.21	6.08	3.87	339
D1DDH02	D2PEG	271513	6824541	585	20.73	11.61	12.42	0.81	327
D1DDH02	D2PEG	271513	6824541	585	20.73	12.57	13.16	0.59	648
D1DDH02	D3PEG	271513	6824541	585	20.73	14.17	15.04	0.87	369
D1DDH03	D1PEG	271452	6824648	630	33.19	8.47	15.70	7.23	398
D1DDH03	D2PEG	271452	6824648	630	33.19	25.19	29.37	4.18	325
D1DDH04	D1PEG	271549	6824648	614	27.68	10.75	12.16	1.41	350
D1DDH04	D2PEG	271549	6824648	614	27.68	20.90	27.09	6.19	288
D1DDH05	D1PEG	271507	6824650	620	30.41	4.08	9.33	5.25	458

HOLE ID	Pegmatite	X	Y	Z	EOH	From	To	Thickness - m	Ta_2O_5 - ppm
D1DDH05	D2PEG	271507	6824650	620	30.41	25.52	28.94	3.42	396
D1DDH06	D1PEG	271507	6824605	605	21.31	1.54	9.53	7.99	317
D1DDH06	D2PEG	271507	6824605	605	21.31	13.02	16.03	3.01	244
D1DDH06	D3PEG	271507	6824605	605	21.31	18.18	19.10	0.92	214
D1DDH07	D1PEG	271559	6824613	600	21.51	0.00	8.67	8.67	169
D1DDH07	D2PEG	271559	6824613	600	21.51	16.21	17.50	1.29	253
D1DDH08	D1PEG	271590	6824608	599	8.09	1.50	2.73	1.23	413
D1DDH08	D2PEG	271590	6824608	599	8.09	7.80	8.09	0.29	357
D1DDH09	D1PEG	271616	6824573	588	29.99	5.04	5.77	0.73	279
D1DDH09	D2PEG	271616	6824573	588	29.99	9.58	19.13	9.55	280
F1DDH02	F1PEG	272051	6823952	676	11.67	5.89	8.14	2.25	343
F1DDH03	F1PEG	272099	6823954	669	11.31	9.71	10.78	1.07	507
F1DDH04	F1PEG	272002	6823945	682	7.89	2.70	4.82	2.12	421
F1DDH05	F1PEG	272003	6824003	679	12.20	9.30	11.97	2.67	309
F1DDH06	F1PEG	272153	6823954	656	7.73	3.76	5.18	1.42	399
F1DDH07	F1PEG	272044	6824008	672	12.14	6.24	8.44	2.20	275
F1DDH08	F1PEG	272005	6824038	676	11.00	6.33	9.37	3.04	459
F1DDH09	F1PEG	272050	6823901	687	12.39	10.38	11.89	1.51	665
F1DDH10	F1PEG	272055	6823982	666	7.33	0.23	2.88	2.65	272
F1DDH11	F1PEG	272104	6823901	672	4.36	1.06	2.93	1.87	618
F1DDH12	F1PEG	272054	6824042	663	14.13	3.68	6.24	2.56	363
F1DDH12	PEG	272099	6824103	634	4.97	7.85	8.28	0.43	443
F1DDH13	F1PEG	272002	6823901	694	9.25	0.43	2.59	2.16	361
F1DDH16	F1PEG	272080	6824169	629	9.70	5.33	7.10	1.77	519
DP01	E7PEG	271899	6823998	713	30.05	2.81	3.39	0.58	652
DP01	F1PEG	271899	6823998	713	30.05	26.37	28.53	2.16	505
DP02	F2PEG	271952	6824049	693	32.77	0.00	0.10	0.10	400
DP02	F2PEG	271952	6824049	693	32.77	1.20	1.79	0.59	488
DP02	F1PEG	271952	6824049	693	32.77	9.52	11.38	1.86	476
DP03	F1PEG	271995	6824097	669	5.75	0.25	2.68	2.43	315
DP04	E7PEG	271851	6824051	732	42.74	16.57	17.79	1.22	884
DP04	F2PEG	271851	6824051	732	42.74	28.33	29.25	0.92	854
DP04	F1PEG	271851	6824051	732	42.74	36.25	37.43	1.18	782
DP05	F2PEG	271902	6824117	718	41.87	27.83	28.38	0.55	355
DP05	F1PEG	271902	6824117	718	41.87	30.21	32.23	2.02	745
DP06	F1PEG	271953	6824161	694	51.05	44.29	46.93	2.64	568
DP07	F1PEG	271992	6824217	682	57.25	52.33	54.03	1.70	649
DP08	PEG	271799	6824054	746	20.53	1.08	1.32	0.24	161
DP08	PEG	271799	6824054	746	20.53	2.42	2.53	0.11	125
DP08	E7PEG	271799	6824054	746	20.53	10.13	10.54	0.41	
DP09	E7PEG	271742	6824045	750	18.75	9.81	11.21	1.40	655
DP10	E7PEG	271795	6824104	741	25.11	16.54	19.01	2.47	619
DP11	E7PEG	271898	6824194	706	92.52	6.64	6.79	0.15	359
DP11	F1PEG	271898	6824194	706	92.52	42.28	44.89	2.61	750
DP11	PEG	271898	6824194	706	92.52	48.00	48.60	0.60	484
DP11	E3PEG	271898	6824194	706	92.52	61.92	62.35	0.43	556

HOLE ID	Pegmatite	X	Y	Z	EOH	From	To	Thickness - m	Ta_2O_5 - ppm
DP11	E2PEG	271898	6824194	706	92.52	69.21	69.54	0.33	454
DP11	E2PEG	271898	6824194	706	92.52	69.86	70.36	0.50	187
DP11	PEG	271898	6824194	706	92.52	75.69	76.16	0.47	382
DP12	F1PEG	271943	6824245	688	56.98	50.23	51.73	1.50	643
DP12	PEG	271943	6824245	688	56.98	51.96	52.07	0.11	380
DP13	F1PEG	272049	6824145	640	13.82	7.92	10.22	2.30	619
DP14	E7PEG	271753	6824101	742	21.23	7.66	9.37	1.71	704
DP14	E8PEG	271753	6824101	742	21.23	15.10	15.95	0.85	376
DP14	F2PEG	271753	6824101	742	21.23	19.78	20.85	1.07	365
DP15	E7PEG	271799	6824128	738	21.87	13.72	17.34	3.62	479
DP16	F1PEG	271738	6824161	726	35.07	20.93	21.78	0.85	441
DP17	E7PEG	271805	6824195	714	37.67	10.80	10.95	0.15	413
DP17	F2PEG	271805	6824195	714	37.67	23.33	25.22	1.89	553
DP17	F1PEG	271805	6824195	714	37.67	30.66	32.44	1.78	731
DP18	E8PEG	271698	6824149	735	134.81	4.48	5.38	0.90	342
DP18	PEG	271698	6824149	735	134.81	6.32	6.51	0.19	131
DP18	F1PEG	271698	6824149	735	134.81	20.51	20.78	0.27	330
DP18	E3PEG	271698	6824149	735	134.81	35.45	36.00	0.55	177
DP18	E2PEG	271698	6824149	735	134.81	80.96	81.11	0.15	206
DP18	PEG	271698	6824149	735	134.81	118.68	118.85	0.17	321
DP18	E1PEG	271698	6824149	735	134.81	131.43	131.98	0.55	266
DP19	F1PEG	271751	6824185	715	49.04	15.32	15.49	0.17	432
DP19	E3PEG	271751	6824185	715	49.04	24.83	24.91	0.08	386
DP20	F1PEG	271701	6824200	717	15.98	2.89	5.97	3.08	614
DP20	E4PEG	271701	6824200	717	15.98	6.73	7.04	0.31	732
DP20	E3PEG	271701	6824200	717	15.98	13.36	13.90	0.54	988
DP21	F1PEG	271661	6824197	727	121.04	5.49	8.49	3.00	454
DP21	E3PEG	271661	6824197	727	121.04	23.04	23.53	0.49	612
DP21	E2PEG	271661	6824197	727	121.04	62.82	62.95	0.13	189
DP21	E1PEG	271661	6824197	727	121.04	114.21	114.60	0.39	73
DP22	F1PEG	271849	6824233	698	37.67	32.82	35.01	2.19	762
DP23	F1PEG	272117	6824149	630	14.79	8.79	10.21	1.42	674
DP23	PEG	272117	6824149	630	14.79	10.37	10.50	0.13	421
DP24	D0PEG	271645	6824535	590	48.25	27.38	37.00	9.62	354
DP25	D0PEG	271583	6824530	605	58.52	28.00	31.59	3.59	404
DP25	D1PEG	271583	6824530	605	58.52	39.88	43.36	3.48	403
DP25	D1PEG	271583	6824530	605	58.52	44.10	44.24	0.14	474
DP25	D2PEG	271583	6824530	605	58.52	44.61	47.69	3.08	368
DP25	D3PEG	271583	6824530	605	58.52	49.09	49.43	0.34	660
DP26	D0PEG	271546	6824512	602	52.83	16.11	19.81	3.70	193
DP26	D1PEG	271546	6824512	602	52.83	31.91	35.16	3.25	304
DP26	D1PEG	271546	6824512	602	52.83	35.25	35.35	0.10	808
DP26	D1PEG	271546	6824512	602	52.83	35.74	36.52	0.78	684
DP26	D2PEG	271546	6824512	602	52.83	42.09	45.35	3.26	497
DP26	D3PEG	271546	6824512	602	52.83	48.55	49.07	0.52	451
DP27	F1PEG	272085	6824174	628	14.84	7.07	8.43	1.36	578

HOLE ID	Pegmatite	X	Y	Z	EOH	From	To	Thickness - m	Ta_2O_5 - ppm
DP28	F1PEG	272094	6824316	619	43.67	24.56	24.93	0.37	603
DP29	F1PEG	272113	6824201	625	21.07	15.12	16.34	1.22	624

7 RESOURCE ESTIMATION

7.1 Geological interpretation and modelling

Geological interpretation of the Swanson pegmatite deposit during the modelling phase agrees with the general emplacement history and method of formation described above.

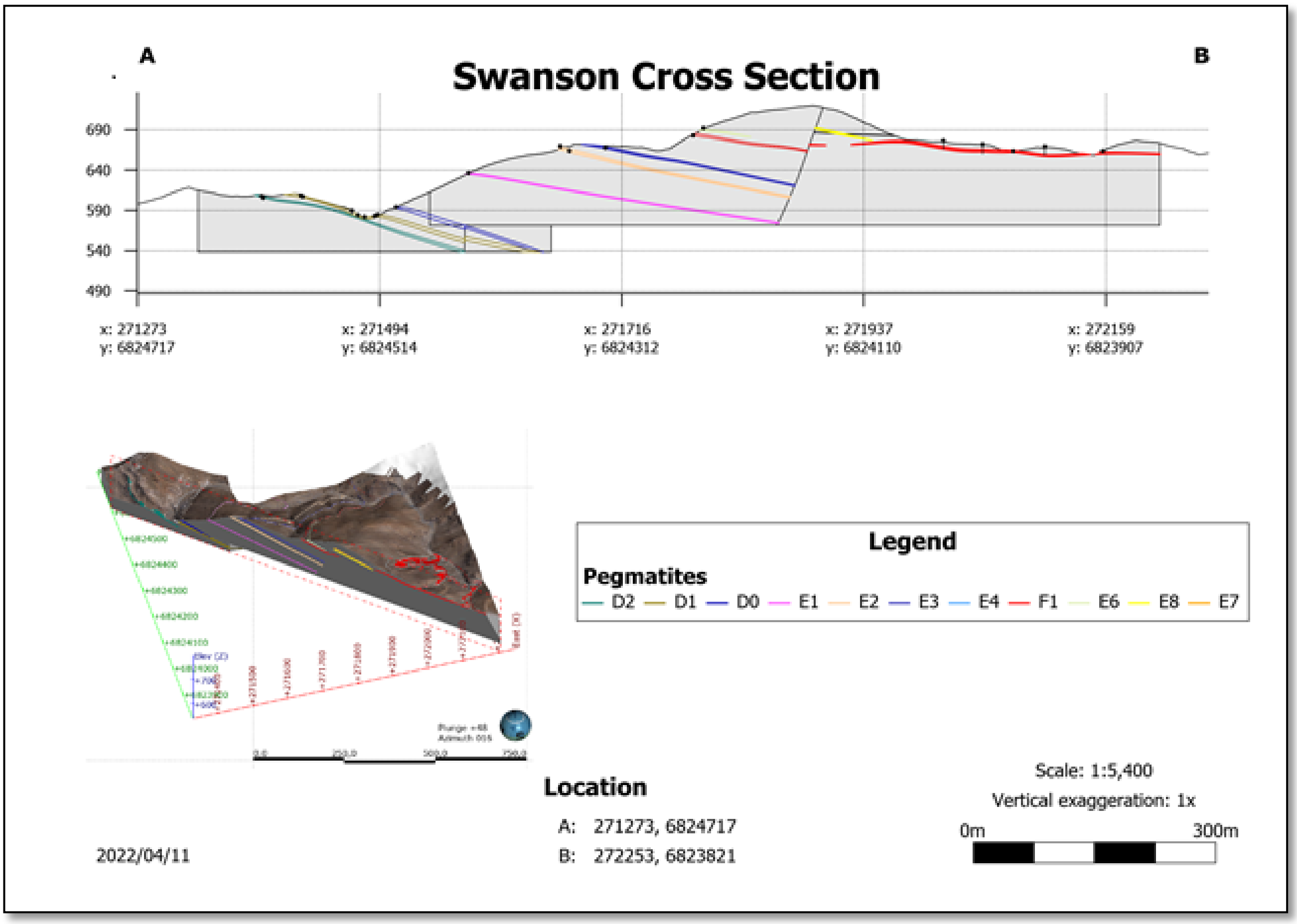
Locally, host rocks to the pegmatite intrusions comprise greenschist facies basic amygdaloidal lavas, phyllites and chlorite schists, with interbedded felsic volcano-sedimentary units. Other intrusions, ranging in composition from acidic dykes to diorites are also present in the area, and locally follow the PSZ strike of 120° northeast. A mylonitic shear zone with this same orientation forms the northern boundary of the pegmatites investigated.

The pegmatites formed in tension fractures that developed adjacent to the mylonitic shear zone within the host meta-gabbro rocks. Acidic interbeds, locally referred to as “bars” by previous explorers (Placer, 1981) adjacent to the gabbro, is more competent and thus did not form fractures as easily as the gabbro to accommodate the propagation of pegmatites.

In terms of their geometry, most of the pegmatites at the Swanson deposit have a general northeast-southwest strike, with shallow dip angles (10-20˚) to the southeast. One of the pegmatites, however, has a different strike from the rest of the pegmatites investigated. Pegmatite 'F1' strikes approximately 148˚ and dips on average at 14˚ to the northeast. Due to the shallow dips of all the pegmatites, this difference in orientation is not easily observed when looking at apparent dips of outcrops but becomes apparent when true dips are viewed in the 3D model. More borehole intersects are required to confirm the emplacement history of the pegmatites, but the current hypothesis is that the F pegmatite intruded after, and crosscuts the 'E' pegmatites. The F1 pegmatite observed in the southeastern part of the study area likely is most likely the same pegmatite that was previously labelled 'E5' in the central E Area.

In the D Area, pegmatites three main pegmatites were identified and included for modelling, namely D2, D1 and D0 in ascending order. Limited channel samples of a D3 and D4 layer, lower in the sequence were recently recorded by the client but were not considered for this resource estimate due to a lack of borehole intersects of these layers. Based on mapping information, it appears as if D0 terminates against the hangingwall side of D1 in some areas. This is likely a crosscutting relationship of different pegmatites but could also be the result of bifurcation of a single pegmatite. The general arrangement is shown in Figure 7.1.

Figure 7.1 Section through the D, E and F pegmatites



7.2 Estimation and modelling techniques

7.2.1 Database checks for modelling

Interval errors and warnings in the geological data were flagged by Leapfrog Geo® modelling software. These errors were then corrected based on the original lithology logs from the drilling at areas D, E and F of the deposit. In addition to these checks, the boreholes were also visually inspected by the geologist to ensure that a “clean” database was used for modelling.

7.2.2 Description of the model

Two models were created for resource estimation purposes, one of the D Area, and another of the E and F areas combined. Although the pegmatite intrusions of the Swanson deposit extend beyond these two areas, model boundaries were created around the sampling/mapping locations of the D and E-F areas only. Implicit geological models were created in Leapfrog Geo® (Version 2021.2.4) for areas D and E-F from the data discussed in Section 6. Implicit modelling, based on a method of global interpolation using radial basis functions, provides a viable alternative to the traditional explicit modelling.

Each of the major pegmatites were modelled using the “vein” function in Leapfrog Geo®. Vein contact surfaces in Leapfrog Geo remove existing lithologies and replace them with the vein lithology within the boundaries defined by hangingwall and footwall surfaces. Hangingwall and footwall surfaces were derived from drilling interval contacts, as well as from mapping information. A surface resolution of 10 m for each vein was inherited from the geological model and a setting for lens surfaces to snap to all input data was applied. Individual planar reference surfaces were defined along the “best fit” between the hangingwall and footwall surfaces for the construction of each vein.

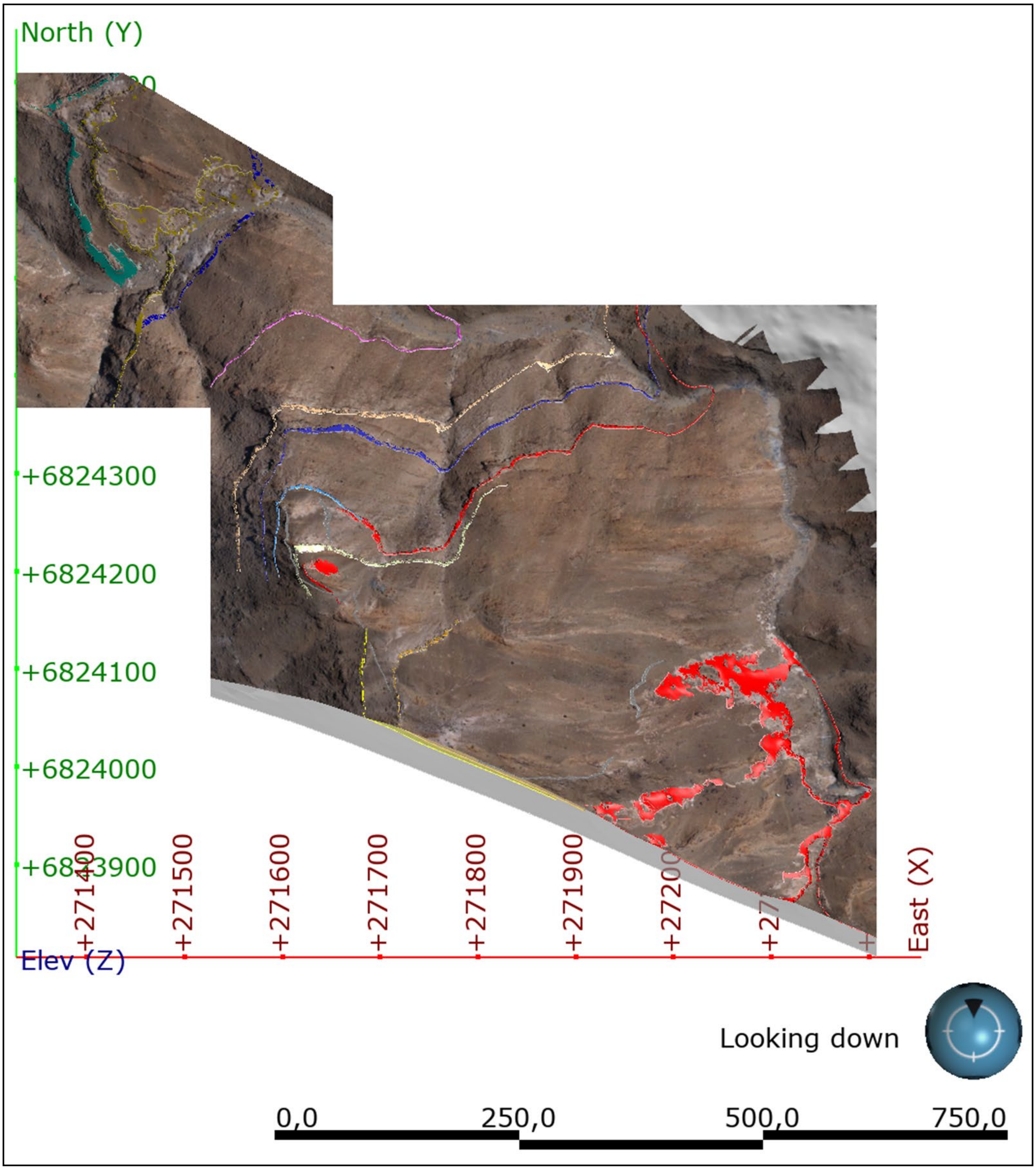
Individual pegmatites were combined into a vein system in Leapfrog Geo. This allows for setting up geochronology and crosscutting relationships between individual veins, as well as reporting of a combined vein system volume, instead of individual volumes only.

Three faults were created, which divided the geological model of the D Area into four fault blocks. All three faults are subparallel steeply dipping east-northeast striking, and do not intersect one another within the boundaries of the modelled area. Thus, no crosscutting relationships had to be specified. Two of the modelled faults in the northern part of Area D are only 16 m apart and likely form part of a steeply dipping fault zone, with little displacement, based on the mapping and drilling information. The third fault lies roughly 100 m to the southwest, and presumably follows the same orientation as the two mentioned above. Another structure, presumably associated with the mylonitic shear zone north of the pegmatites, was used as the northern boundary for the D Area model during this estimate.

A steeply dipping north-northeast-striking fault forms the southern boundary of the geological model for the E-F Area. Small offsets or bends in the pegmatites are observed, but only one main structure wat activated as a fault in the model. Similar to the fault mentioned above, this fault strikes north-northwest and dips steeply to the northeast. Notes by the ORP field geologists suggest normal movement along this fault, however, a similar vertical offset of dipping pegmatites could have occurred through sinistral strike-slip kinematics. More information is needed to confirm the true sense of movement, but the apparent downthrow is to the north of this structure.

Down-hole structural logging of orientated boreholes is suggested to better understand the nature and true displacement of the faults and structures mentioned above.

Figure 7.2 **A plan view perspective of the D Area (north-western part) and E-F Area (larger, south-eastern part) that were modelled. Bright colours indicate pegmatite outcrops.**



7.3 Coding and compositing

As no zoning of pegmatites was observed (Placer, 1981; Hattingh, 2021), full seam composites were created for all the modelled pegmatite targets. Where more than one sample was taken over the seam thickness, the sample thickness was used to weight the final composite. No consistent vertical trend was found in the parameters measured.

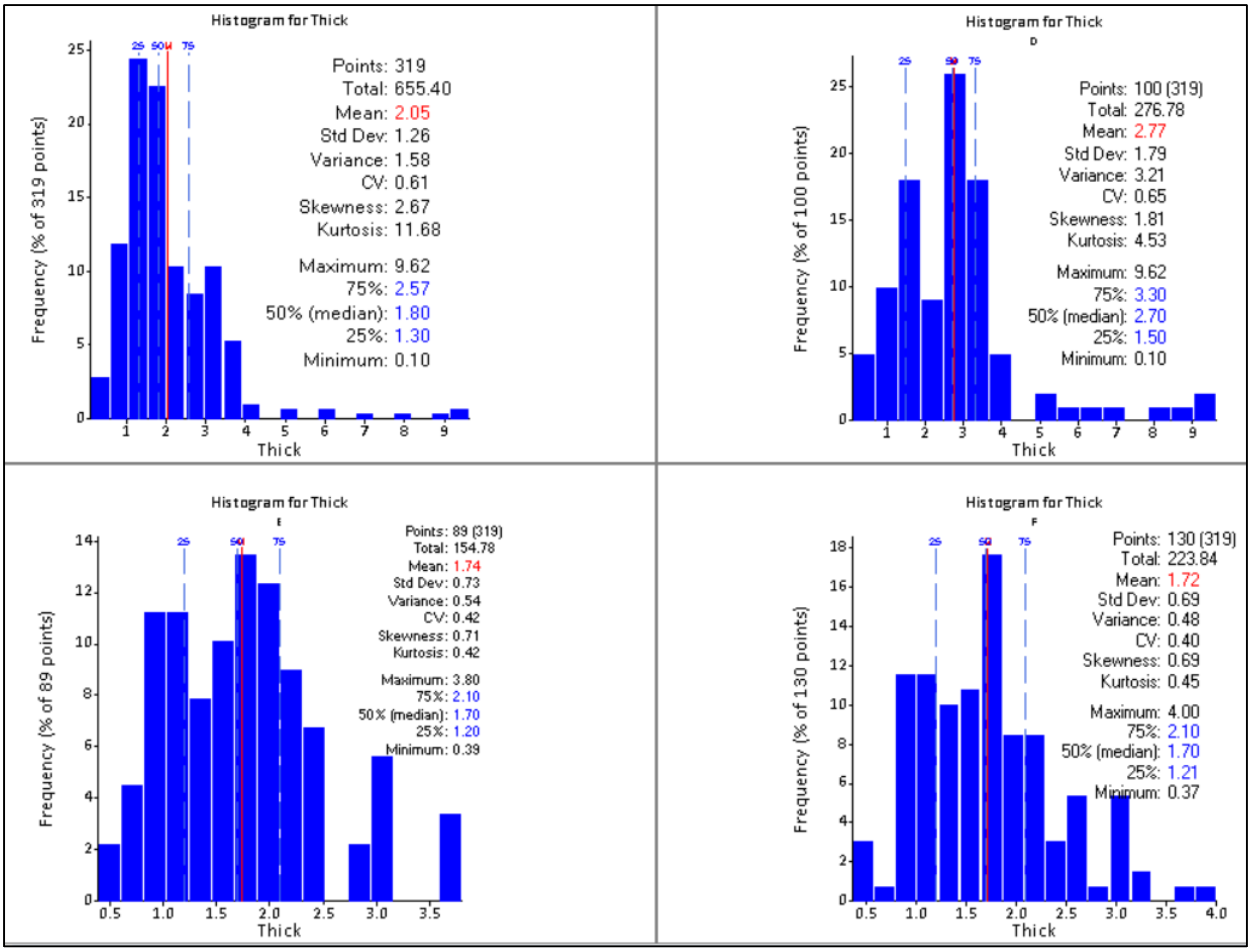
As only the pegmatite was sampled, and there is a sharp contact at the top and bottom of the pegmatite unit, the composites were considered to be accurate representations of the mineralisation.

7.4 Univariate and bivariate statistics

Composites were created for the following pegmatite bodies: D0, D1, D2, E1, E2, E3, E4, E5, E6, E7, E, F1 and F2. These were grouped into D, E and F pegmatites for the purposes of this analysis.

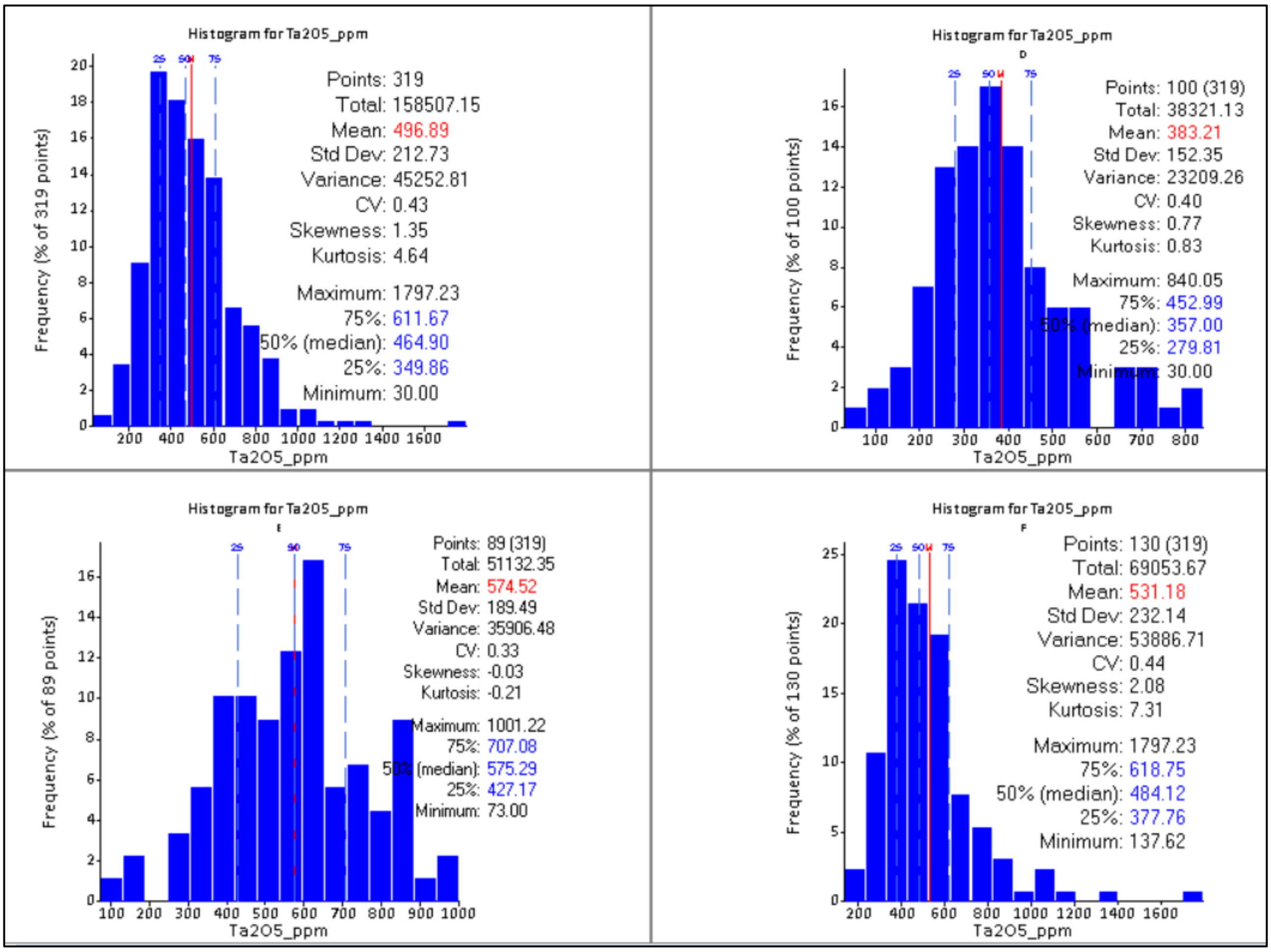
Univariate statistics for thickness in the D, E and F pegmatites are shown in Figure 7.3. The distribution is near-normal, with an overall low positive skewness of 2.67 (zero being symmetrical). This skewness is affected by a number of thicker intersections, particularly in the D pegmatites. The overall mean thickness is 2.05 m, with average thickness decreasing from D (2.77 m) to E (1.74 m) to F (1.72 m).

Figure 7.3 Univariate statistics for thickness in the D, E and F pegmatites



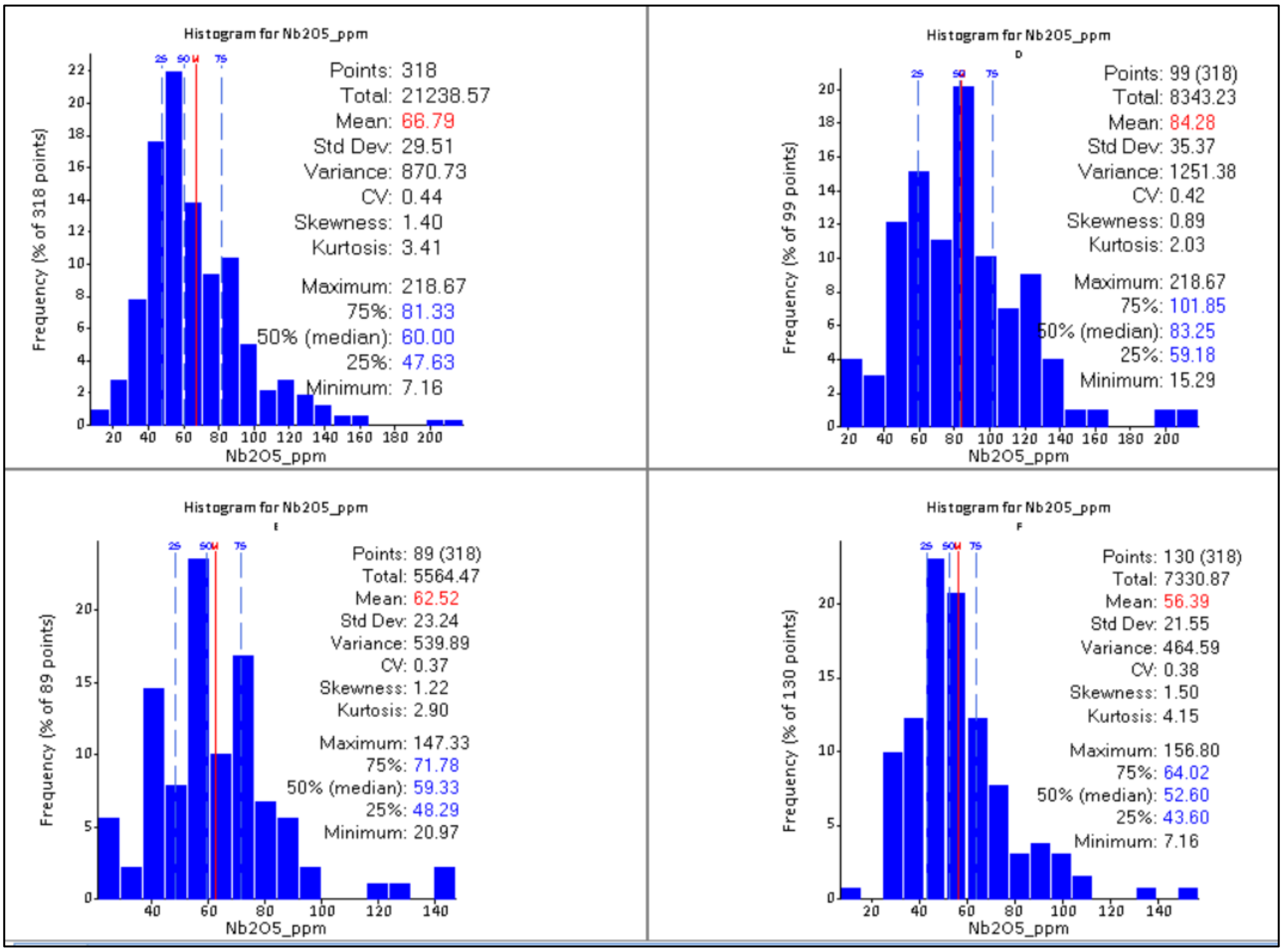
Univariate statistics for Ta_2O_5 ppm in the D, E and F pegmatites are shown in Figure 7.4. The distribution is near-normal, with an overall low positive skewness of 1.35 (zero being symmetrical). This skewness is affected by a number of higher-grade samples, particularly in the F pegmatites. The overall mean value is 497 ppm Ta_2O_5, with average grades increasing materially from D (383 ppm) to E (574 ppm), and then decreasing slightly to F (531 ppm).

Figure 7.4 Univariate statistics for Ta_2O_5 ppm in the D, E and F pegmatites



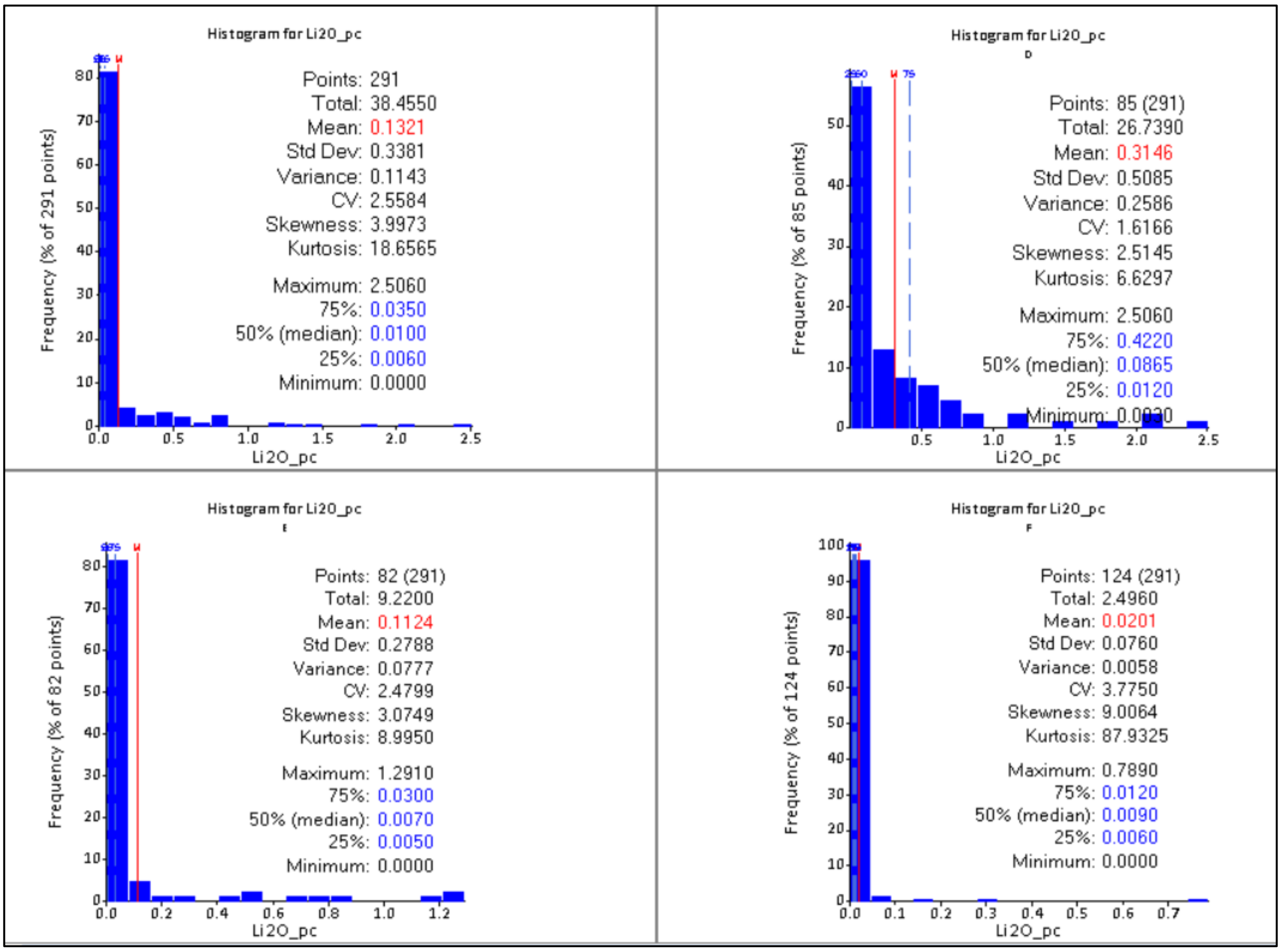
Univariate statistics for Nb_2O_5 ppm in the D, E and F pegmatites are shown in Figure 7.5. The distribution is near-normal, with an overall low positive skewness of 1.40 (zero being symmetrical). This skewness is affected by a number of higher-grade samples, particularly in the D pegmatites. The overall mean value is 67 ppm Nb_2O_5, with average grades decreasing from D (84 ppm) to E (63 ppm), and then decreasing slightly to F (56 ppm).

Figure 7.5 Univariate statistics for Nb_2O_5 ppm in the D, E and F pegmatites



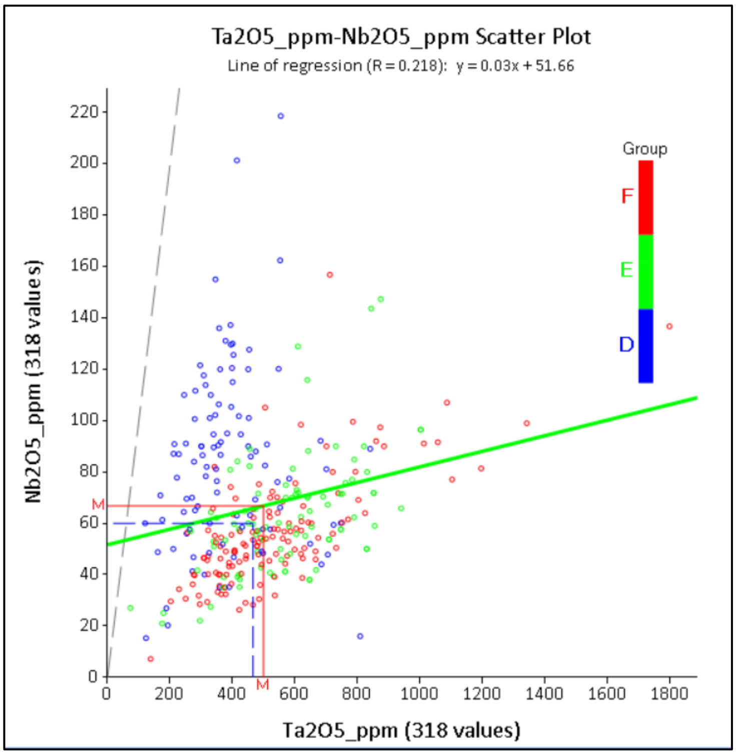
Univariate statistics for Li_2O % in the D, E and F pegmatites are shown in Figure 7.6. The distribution is strongly positively skewed, with an overall positive skewness of 4.0 (zero being symmetrical). This skewness is affected by a number of higher-grade samples, particularly in the D pegmatites. The overall mean value is 0.13 % Li_2O, with average grades decreasing from D (0.31 %) to E (0.11 ppm), and to F (0.02 %).

Figure 7.6 Univariate statistics for Li_2O % in the D pegmatites



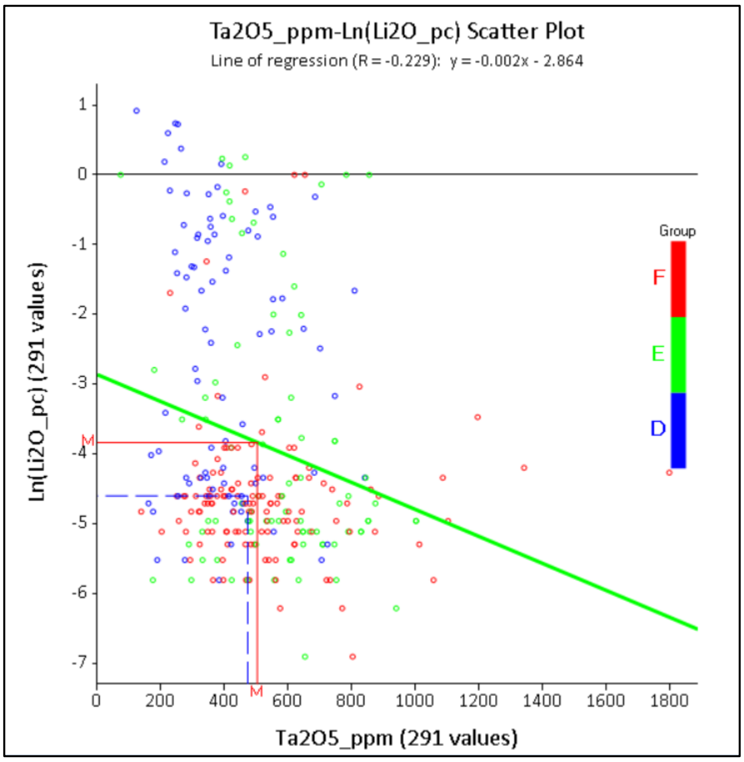
A plot of Ta_2O_5 vs Nb_2O_5 is shown in Figure 7.7. The two variables are positively correlated, with each pegmatite showing distinct distributions.

Figure 7.7 Ta_2O_5 ppm vs Nb_2O_5 ppm for the D, E and F pegmatites



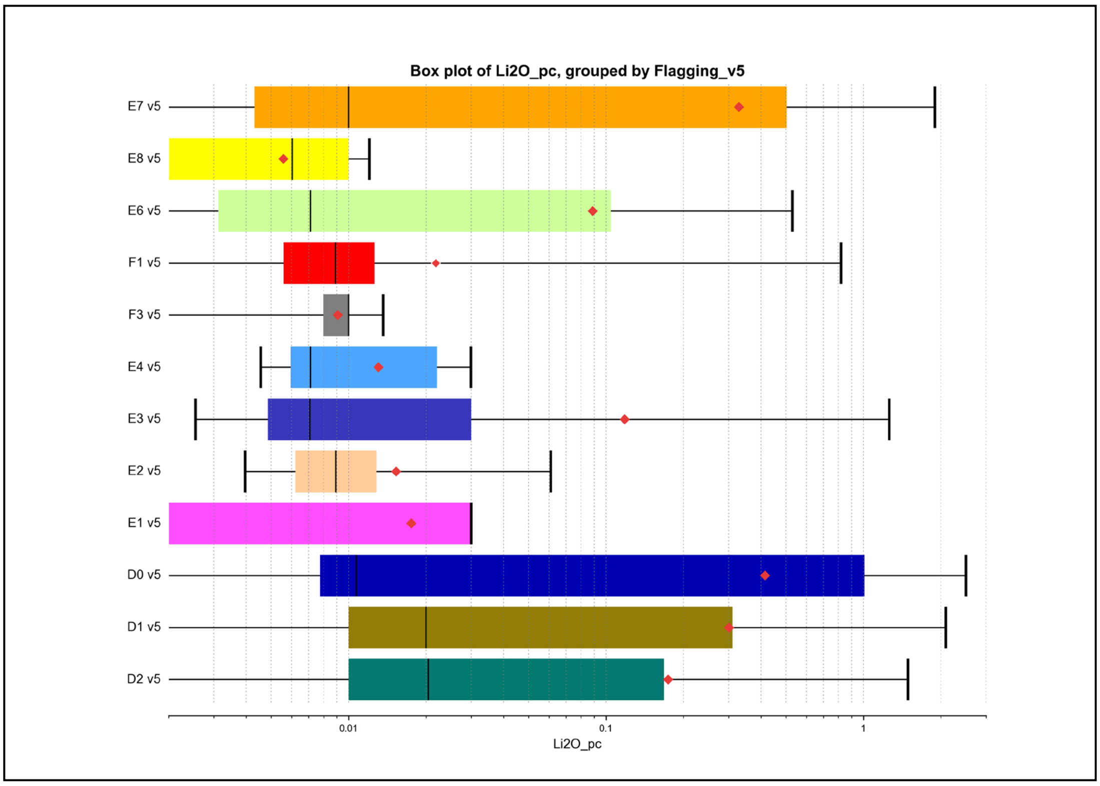
A plot of Ta_2O_5 vs Li_2O is shown in Figure 7.8. The two variables are positively correlated, with each pegmatite showing distinct distributions.

Figure 7.8 Ta_2O_5 ppm vs Li_2O ppm for the D, E and F pegmatites



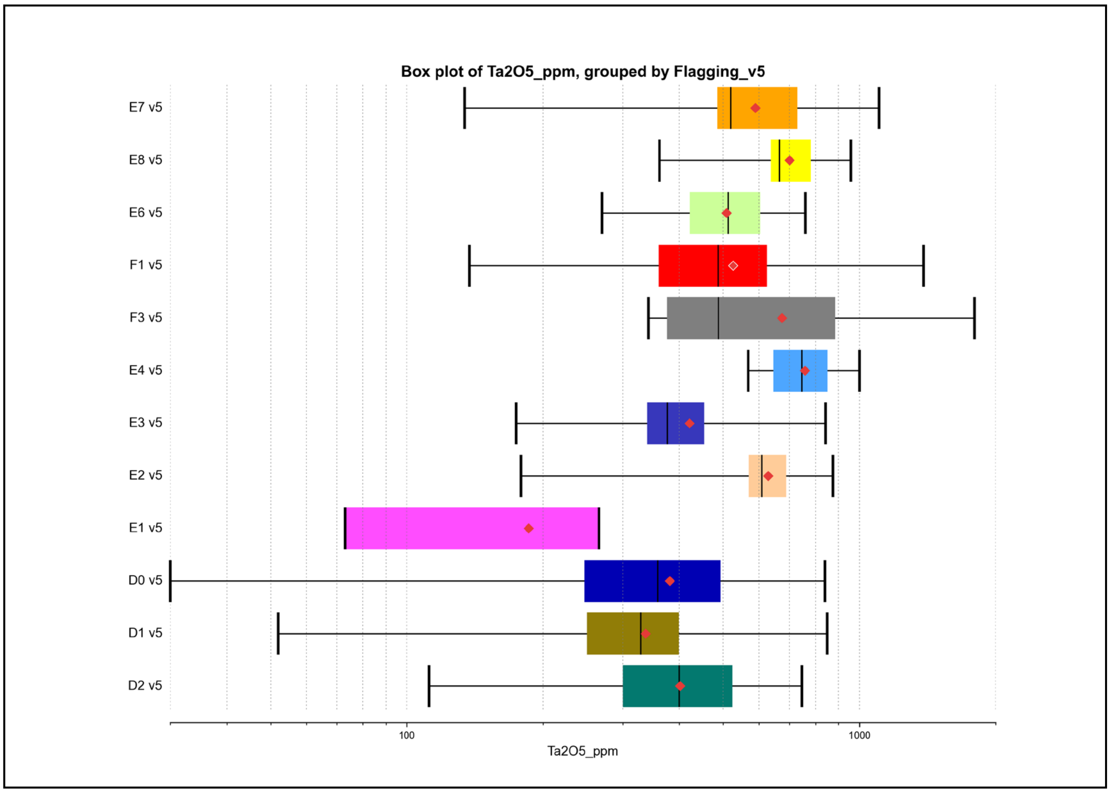
A box-and-whisker plot of Li_2O % per pegmatite is shown in Figure 7.9. Li_2O average percentages are highest in the D pegmatites, and also exhibit the highest range.

Figure 7.9 A statistical box plot of the Li_2O% per pegmatite that was investigated.



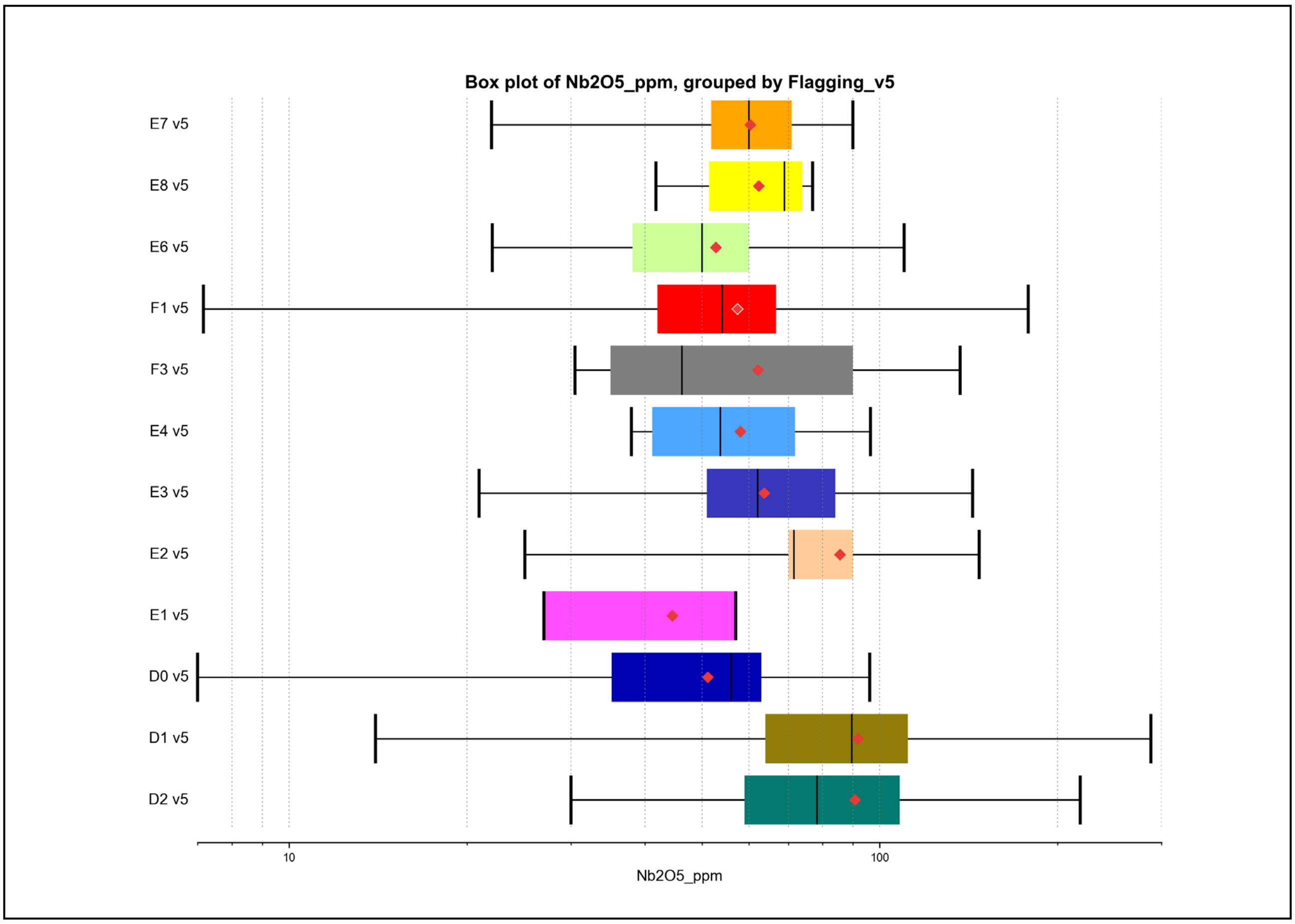
A box-and-whisker plot of Ta_2O_5 ppm per pegmatite is shown in Figure 7.9. Ta_2O_5 average grades are highest in the F pegmatites, with a general increase in average grade from D to E to F pegmatites.

Figure 7.10 A statistical box plot of the Ta_2O_5 ppm per pegmatite that was investigated.



A box-and-whisker plot of Nb_2O_5 ppm per pegmatite is shown in Figure 7.9. Nb_2O_5 average ppm decrease slightly from D to E to F pegmatites.

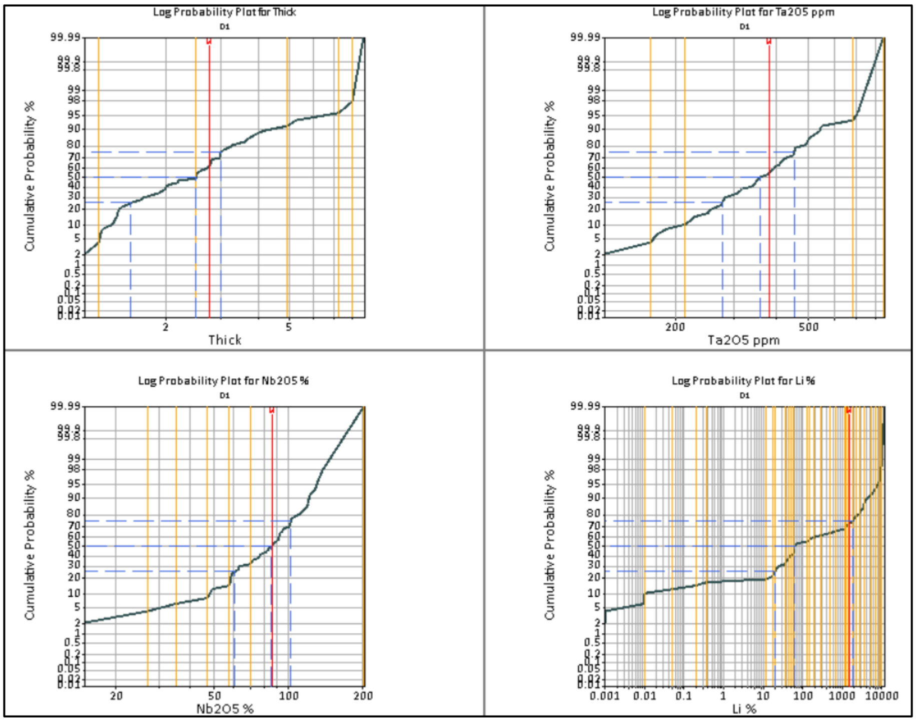
Figure 7.11 A statistical box plot of the Nb_2O_5 ppm per pegmatite that was investigated.



7.4.1 Extreme values

An extreme value analysis was conducted, as shown in Figure 7.12.

Figure 7.12 D1 top cut analysis



Based on this analysis, it was decided not to apply any top cutting, but that this should be looked at in the next resource estimation.

7.5 Variography

7.5.1 D1 pegmatite

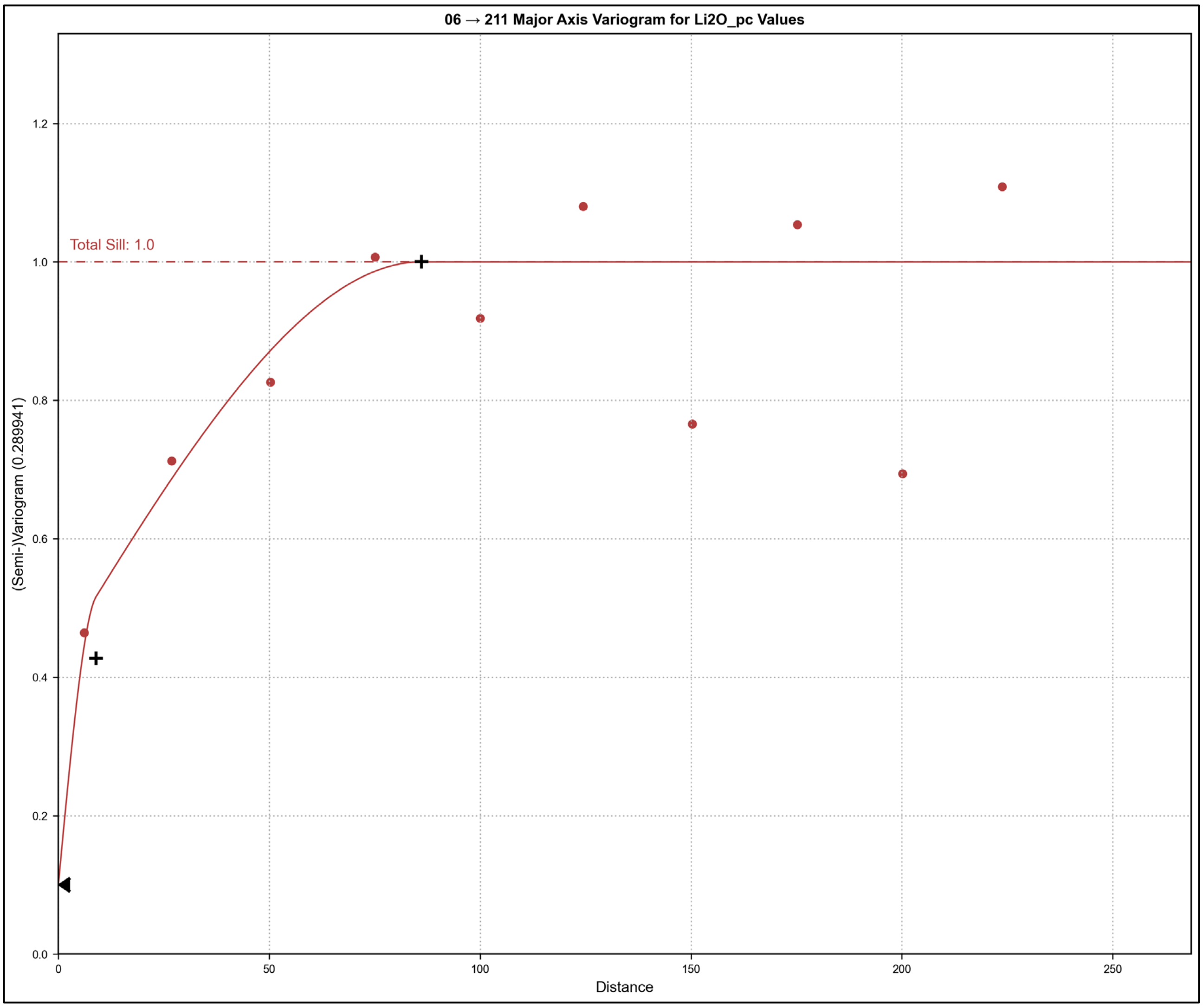
A variogram with the following orientation (dip 15.65˚, dip azimuth 142.33˚, pitch 157.47˚) was created for Li_2O% of the D1 pegmatite (refer to Figure 7.13). The modelled variogram shows a nugget to sill ratio of 0.1, with a two-structure spherical model. The sill of the first model is 0.095, with a range of 8.9 m, and the sill of the second structure is 0.166 with a range of 86.15 m.

The variogram parameters are shown in Table 7.1.

Table 7.1 Variogram parameters for the D1 pegmatite

06 > 211 Major Axis Variography for Li_2O _pc Values							
Number of Points	42						
Variance	0.2899						
[Trend]							
Dip	15.65						
Dip Azimuth	142.33						
Pitch	157.4672						
[Variogram Parameters]							
Structure	**Sill**	**Normaliser**	**Model**	**Alpha**	**Major**	**Semi-Major**	**Minor**
Nugget	0.02899	0.1					
Structure 1	0.0949	0.3273	Spherical	-	8.936	9.458	7.217
Structure 2	0.166	0.5727	Spherical	-	86.15	76.53	24
Total Sill:	0.289941	1					
[Experimental Parameters]							
Lag	25						
Lag Tolerance	12.5						
Number of Lags	9						
	In plane	Off plane					
Angle Tolerance	90	90					

Figure 7.13 D1 major axis variogram for Li_2O%



7.5.2 D2 pegmatite

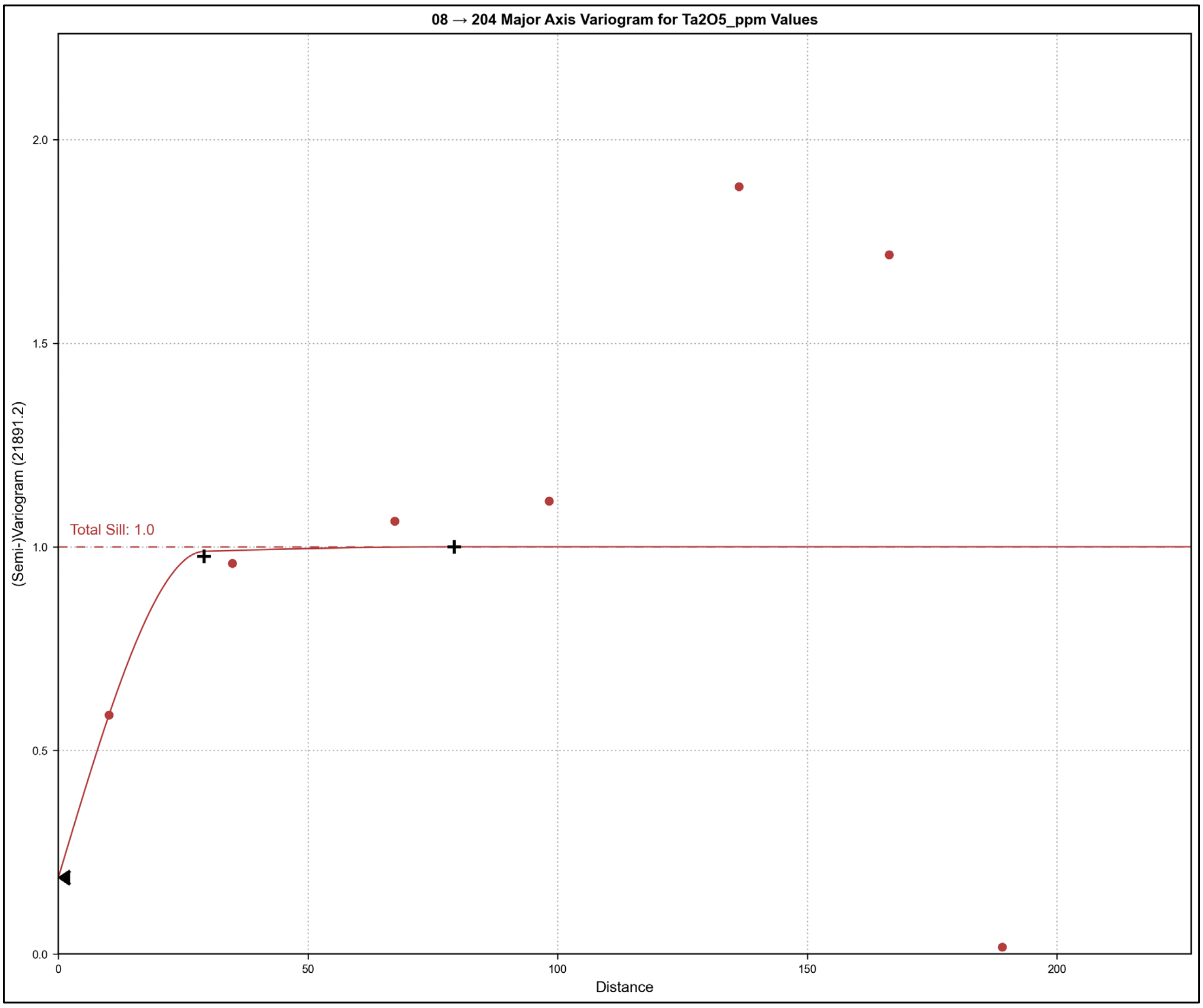
A variogram with the following orientation (dip 15.65˚, dip azimuth 142.33˚, pitch 157.47˚) was created for Ta_2O_5 ppm of the D2 pegmatite (refer to Figure 7.14). The modelled variogram shows a nugget to sill ratio of 0.19, with a two-structure spherical model. The sill of the first model is 17270, with a range of 29.17 m, and the sill of the second structure is 510.9 with a range of 79.33 m.

The variogram parameters are shown in Table 7.2.

Table 7.2 Variogram parameters for the D2 pegmatite

068> 204 Major Axis Variography for Ta_2O_5ppm Values							
Number of Points	26						
Variance	21890						
[Trend]							
Dip	15.65						
Dip Azimuth	142.33						
Pitch	150.9998						
[Variogram Parameters]							
Structure	**Sill**	**Normaliser**	**Model**	**Alpha**	**Major**	**Semi-Major**	**Minor**
Nugget	4110	0.18774					
Structure 1	17270	0.789	Spherical	-	29.17	8.748	20
Structure 2	510.9	0.2334	Spherical	-	79.33	61.02	24
Total Sill:	21892.93	1.00008					
[Experimental Parameters]							
Lag	34						
Lag Tolerance	17						
Number of Lags	6						
	In plane	Off plane					
Angle Tolerance	45	45					

Figure 7.14 D2 major axis variogram for Ta_2O_5 ppm



7.5.3 F1 pegmatite

An omnidirectional normal score transformed variogram was created for Li_2O% of the F1 pegmatite (refer to Figure 7.15). The modelled variogram shows a nugget to sill ratio of 0.3, with a two-structure spherical model. The sill of the first model is 0.32, with a range of 34 m, and the sill of the second structure is 0.39 with a range of 141 m.

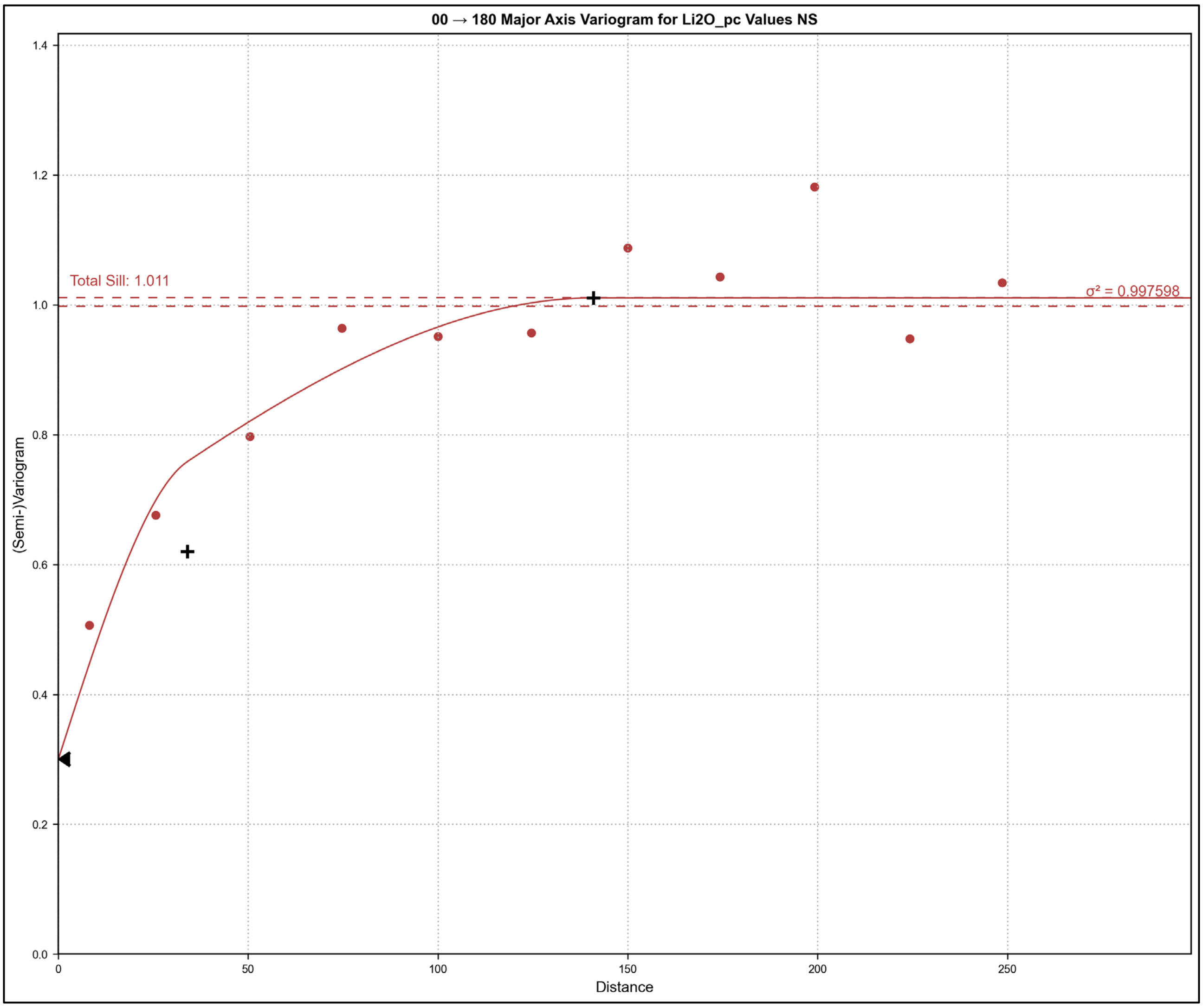
The variogram parameters are shown in

Table 7.3.

Table 7.3 Variogram parameters for the F pegmatite

00> 180 Major Axis Variography for Li_2O_pc Values NS							
Number of Points	114						
Variance	0.9976						
[Trend]							
Dip	0						
Dip Azimuth	0						
Pitch	90						
[Variogram Parameters]							
Structure	**Sill**	**Normaliser**	**Model**	**Alpha**	**Major**	**Semi-Major**	**Minor**
Nugget	0.3	0.300722					
Structure 1	0.32	0.3208	Spherical	-	34	34	34
Structure 2	0.3906	0.3915	Spherical	-	141	141	141
Total Sill:	1.010589	1.013022					
[Experimental Parameters]							
Lag	25						
Lag Tolerance	12.5						
Number of Lags	10						
	In plane	Off plane					
Angle Tolerance	90	90					

Figure 7.15 F1 major axis transformed variogram for Li_2O%



7.5.4 Other pegmatites

For the D0 and the E pegmatites, omnidirectional variograms, based on the findings of D1 in the first phase were used.

7.6 Block modelling

7.6.1 Block model

D1 parameters

The following are the kriging parameters for Ta_2O_5, Nb_2O_5, and Li_2O:

- Omni-directional variogram:
  - Nugget 0.52
  - Sph1 0.34 22
  - Sph2 0.12 50
  - Block size (parent cell) 10 x 10 x 2
  - Sub-blocking 2 x 2 x 2
  - Discretisation 2 x 2 x 2.

- Octant search
  - Minimum 2, maximum 16 samples total
  - Minimum 2, maximum 8 samples per octant
  - Search 100 x 100 x 10 first pass (use all samples)
  - Search 200 x 200 x 10 second pass.
  - Search 500 x 500 x 100 third pass.

D2 parameters

The following are the kriging parameters for F1 for Ta_2O_5, Nb_2O_5, and Li_2O:

- Omni-directional variogram:
  - Nugget 0.60
  - Sph1 0.20 12
  - Sph2 0.20 54
  - Block size (parent cell) 10 x 10 x 2
  - Sub-blocking 2 x 2 x 2
  - Discretisation 2 x 2 x 2.
- Octant search:
  - Minimum 2, maximum 16 samples total
  - Minimum 2, maximum 8 samples per octant
  - Search 100 x 100 x 10 first pass (use all samples)
  - Search 200 x 200 x 10 second pass.
  - Search 500 x 500 x 100 third pass.

F1 parameters

The following are the kriging parameters for F1 for Ta_2O_5, Nb_2O_5, and Li_2O:

- Omni-directional variogram:
  - Nugget 0.33
  - Sph1 0.45 10
  - Sph2 0.22 50
  - Block size (parent cell) 10 x 10 x 2
  - Sub-blocking 2 x 2 x 2
  - Discretisation 2 x 2 x 2.
- Octant search:
  - Minimum 2, maximum 16 samples total
  - Minimum 2, maximum 8 samples per octant
  - Search 100 x 100 x 10 first pass (use all samples)
  - Search 200 x 200 x 10 second pass.
  - Search 500 x 500 x 100 third pass.

7.6.2 Resource models

Three-dimensional views of the resource models for the D area and for the EF area are shown in Figure 7.16 and Figure 7.17 respectively.

Figure 7.16 Three-dimensional model of the D area pegmatites

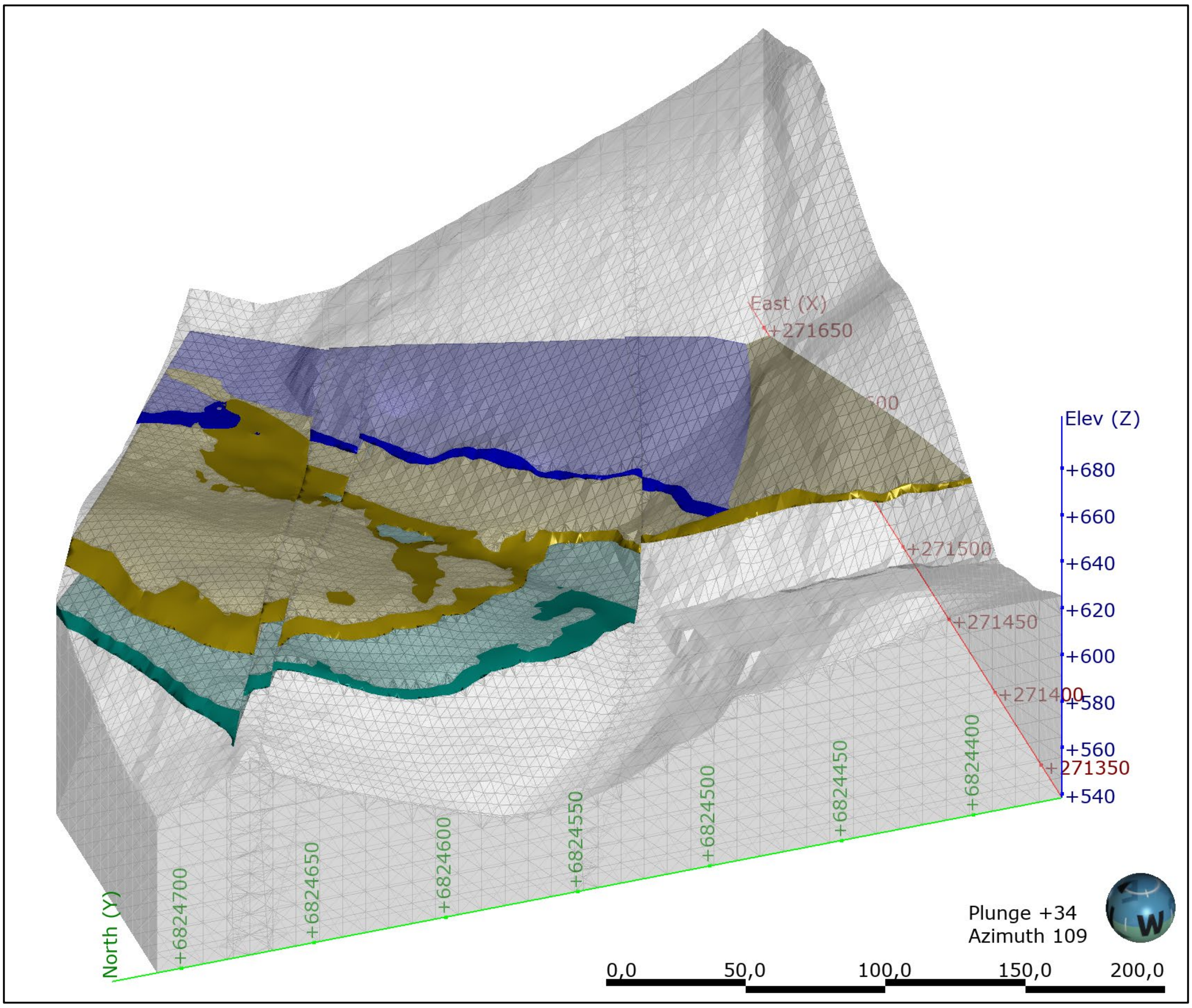
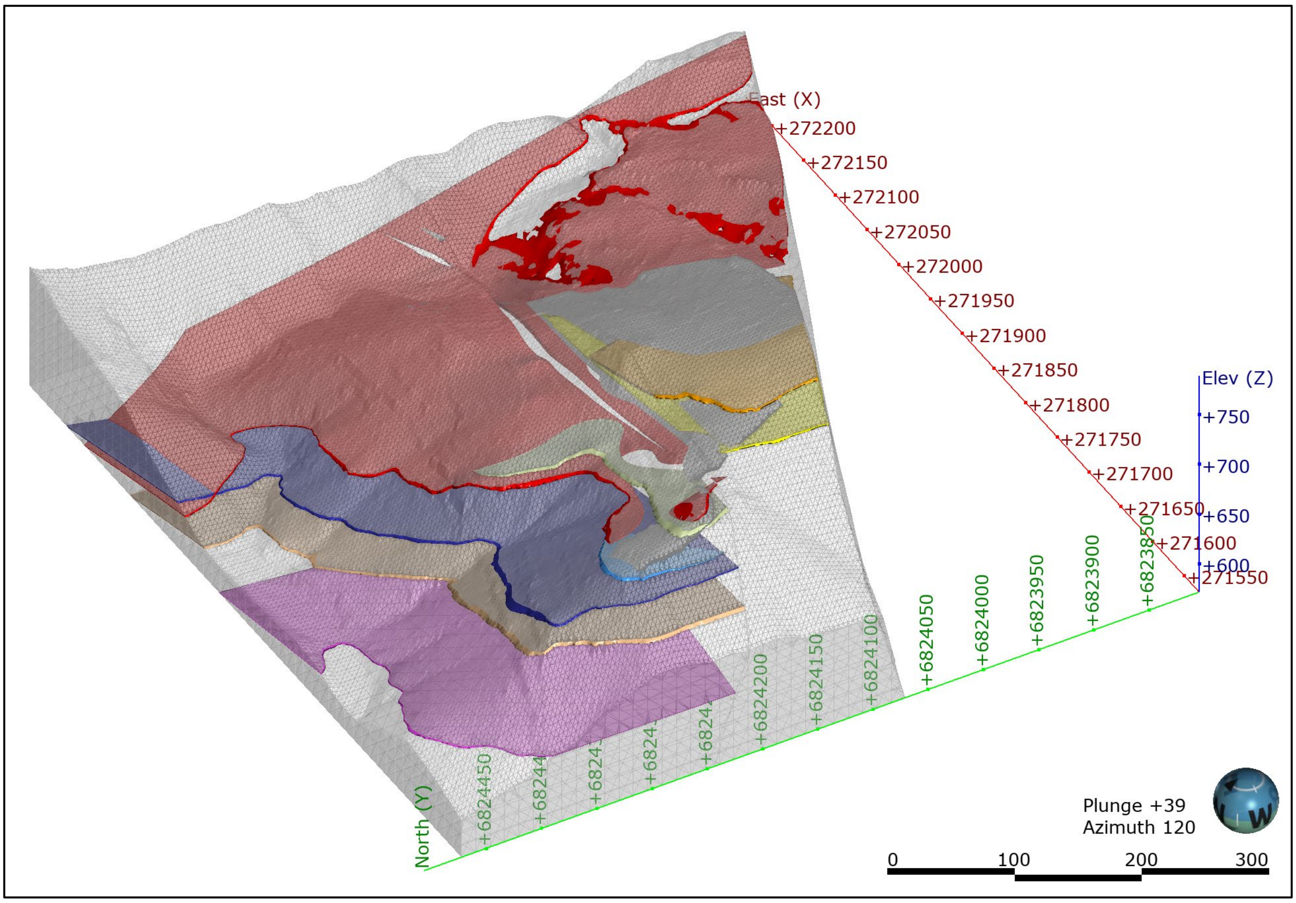


Figure 7.17 Three-dimensional model for the E and F area pegmatites



7.6.3 Density estimation and assignment

SG measurements were taken from drillhole core, and no interval lengths of these samples were provided, An unweighted average was calculated for the three rock types indicated: pegmatites, pegmatite/hybrid metagabbro and associated rocks, and quartz andesine intrusives. Pegmatite samples yielded an average SG of 2.64, which was applied as a global value for pegmatites during estimation.

7.6.4 Prior mining

No prior mining in the project area has been undertaken.

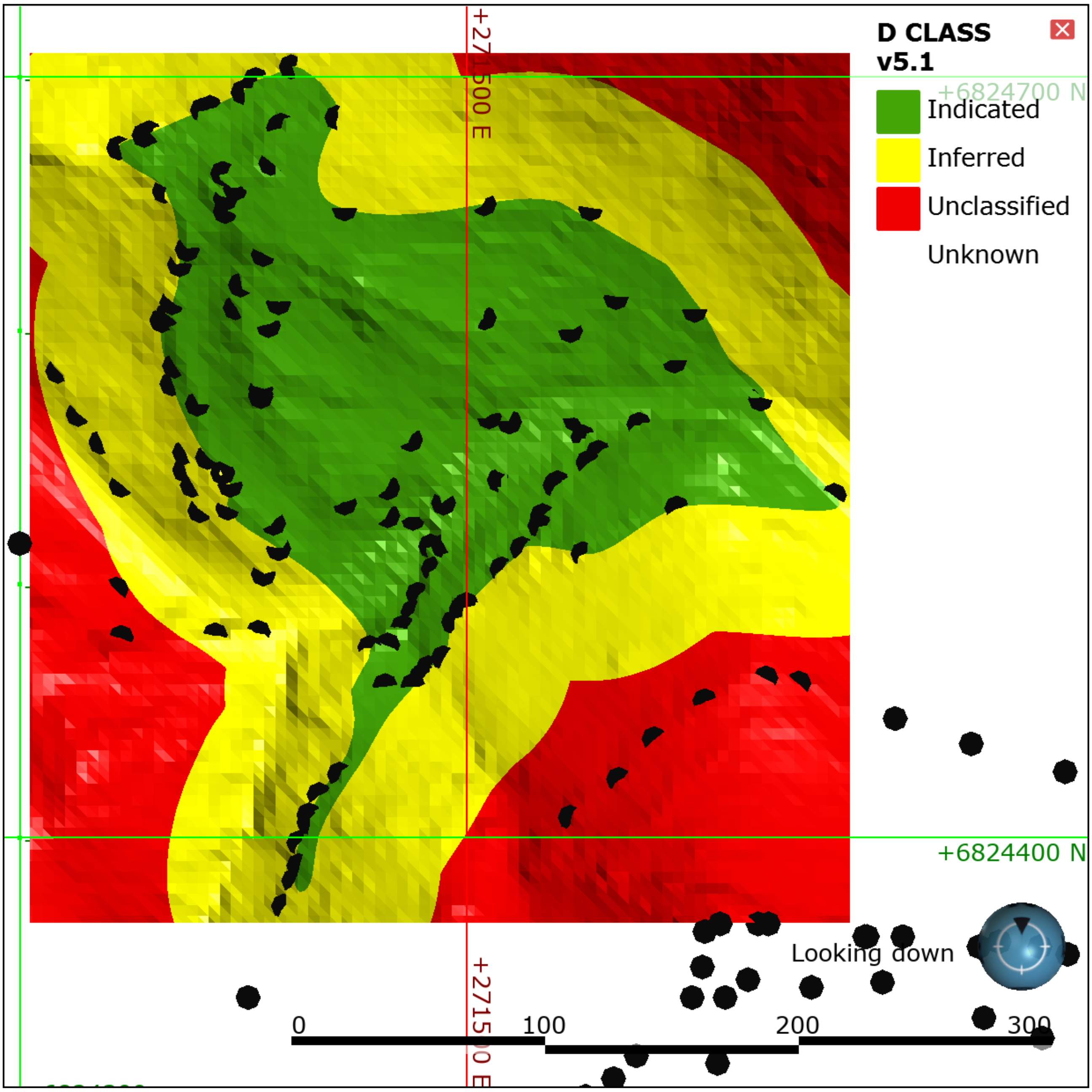
7.7 Resource classification

Resources in the E-F Area were classified on a distance from sample basis. A boundary "shell" was created around sampled borehole traces that were used for the estimation – this includes boreholes and channel samples. A steeply dipping north-northeast-striking fault forms the southern boundary of this classification system for the E-F Area, whereas the intermittent stream that drains the area forms the eastern and northern boundaries. Resources within this boundary were classified to have an Indicated confidence level. Based on the average variogram range for the Li_2O, a buffer of 50 m was created around the boundary shell described above. Pegmatite deposits within the 50 m buffer were classified as Inferred. Any deposits beyond the 50 m buffer are considered "Unclassified" and were not included in this resource report.

A similar classification method was used for the D Area, but instead of using a "shell" around the borehole traces, a polygon around the borehole collars was projected vertically downward. The reason for using the shell approach in the E-F area was to take into consideration shallower holes that did not intersect the lowermost E pegmatite layers. Applying the same resource classification method in the E-F area that was used in the D Area would give unrealistically high confidence to these lower pegmatites, with shallow holes drilled above them, but not into them.

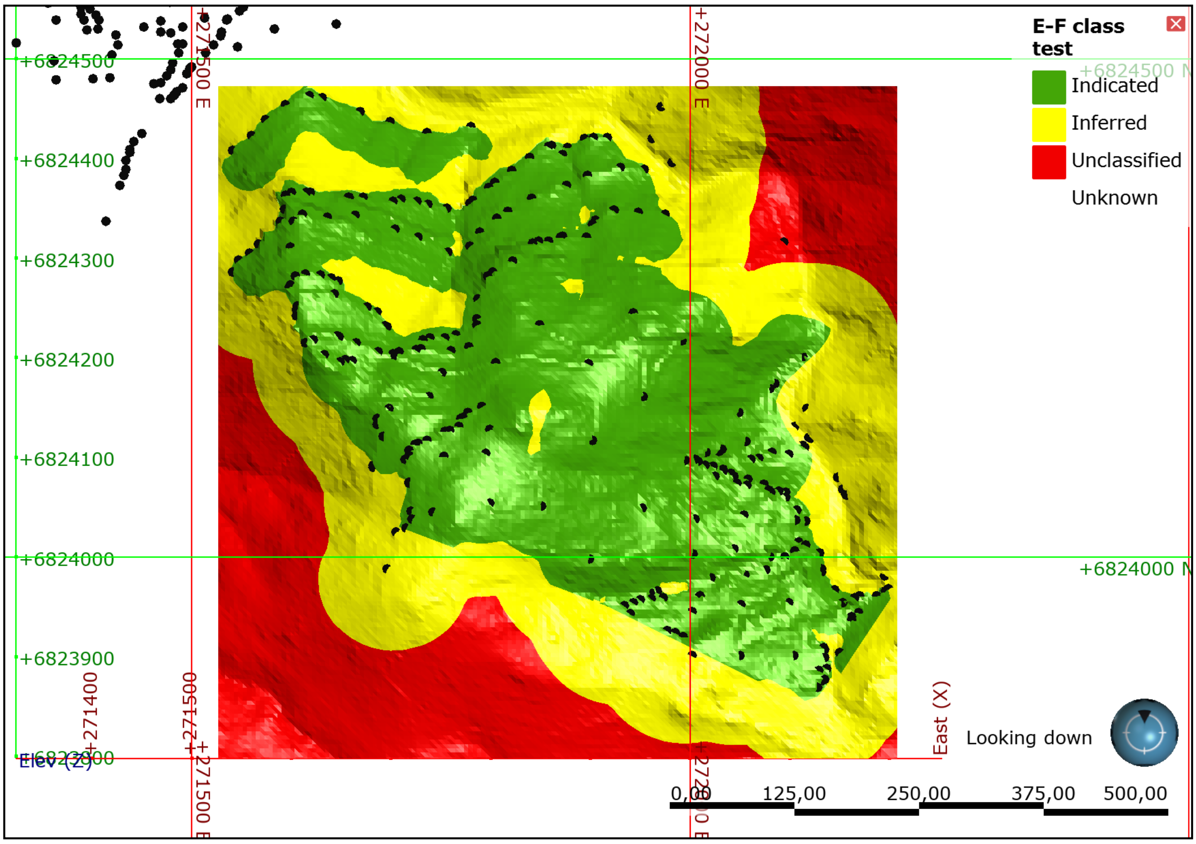
Sparse spacing, of drillholes specifically, in large parts of the D and E-F deposits, resulting in low to unknown statistical grade continuity in these areas is the main reason for not considering the deposit as a Measured Resource at this stage. Nevertheless, the detailed mapping carried out by ORP suggests that geological continuity of the pegmatites is likely.

Figure 7.18 Resource classification of the D pegmatites



The resource classification at the F pegmatite is shown in Figure 7.19.

Figure 7.19 Resource classification of the E and F pegmatites



7.8 Mineral Resource reporting

7.8.1 Mineral Resource

Figure 7.18 and Figure 7.19 show the Indicated and Inferred Resources at the D and E-F Areas. The distribution of Li_2O%, Ta_2O_5 ppm and Nb_2O_5 ppm can be seen in the box plots in Section 7.4. Int total, the two areas have 2 584 kt in the Inferred and Indicated categories combined. Roughly 60% of this estimated tonnage lies in the E-F area. This figure should significantly increase if the down-dip continuation of the lower E pegmatites can be proven with borehole intersects in the future.

In the D area alone, there is a total of 568 kt of Indicated ore, at an average grade of 365 ppm Ta_2O_5, 0.27% Li_2O, and 87 ppm Nb_2O_5. Indicated resources in the E-F area add up to 577 kt, at an average grade of 578 ppm Ta_2O_5, 0.07% Li_2O, and 65 ppm Nb_2O_5.

Table 7.4 Indicated and Inferred Mineral Resources at the D-Area at 236 ppm Ta_2O_5 cut-off

D, E and F		Mass (kt)	Ta_2O_5 ppm	Nb_2O_5 ppm	Li_2O %	Ta_2O_5 tonnes
Indicated	Total D	568	365	87	0.270	207
	Total EF	577	578	65	0.070	334
	Subtotal	**1,145**	**472**	**76**	**0.169**	**541**
Inferred	Total D	444	365	79	0.340	162
	Total EF	995	557	69	0.050	554
	Subtotal	**1,439**	**498**	**72**	**0.139**	**716**
Comparison to September 2021						
Indicated Sept 2021	Total	664	431	76	0.280	286
Inferred Sept 2021	Total	544	389	75	0.300	212

Table 7.5 Indicated and Inferred Mineral Resources at the E-F-Area at 236ppm Ta_2O_5 cut-of

D Class v5.1	D v5.1 for Estimation	Mass (kt)	Ta_2O_5 ppm	Nb_2O ppm	Li_2O %
Indicated	D0 v5	25	314	41	0.18
	D1 v5	323	340	96	0.35
	D2 v5	220	408	78	0.17
	Total	**568**	**365**	**87**	**0.27**
Inferred	D0 v5	90	325	46	0.29
	D1 v5	250	361	93	0.42
	D2 v5	103	408	72	0.19
	Total	**444**	**365**	**79**	**0.34**
Indicated + inferred	**D0 v5**	**115**	**322**	**45**	**0.27**
	D1 v5	**573**	**349**	**95**	**0.38**
	D2 v5	**324**	**408**	**76**	**0.17**
	Total	**1 012**	**365**	**83**	**0.3**

7.8.2 Comparison to previous estimates

Placer estimated "possible reserves" in 1981 for pegmatites A to G, using a minimum pegmatite thickness of 1 m. Placer estimated these reserves at Ta_2O_5 cut-offs of 0 ppm, 300 ppm and 500 ppm. These are considered to be historical estimates.

In May 2020, Philip le Roux, Albertus Pepler and Jurie Wessels authored an unpublished Preliminary Economic Assessment for the Orange River Tantalite Project, in which they quoted an independent third party SAMREC compliant resource statement, done by Dr Johan Hattingh of Creo Design (Pty) Ltd ("Creo") in Cape Town. This was done at a 0 ppm Ta_2O_5 cut-off.

In the prospectus document, no Mineral Resources were declared. In the comprehensive supporting document on exploration activities at ORP, Hattingh (March 2021) stated that there was insufficient information to estimate a Mineral Resource in accordance with the JORC Code (2012) at the time of reporting and that limited information regarding the spatial extent of the mineralisation was available.

The previous estimates are shown in Table 7.6.

Table 7.6 Previous MREs for the D and F pegmatites at the Project (2020)

Source	Area	Thick (m)	Tonnes (kt)	Ta_2O_5 (ppm)	Nb_2O_5 (ppm)	Li_2O (%)	Ta_2O_5 : Nb_2O_5
D Pegmatite							
ORP 2020	D	2.33	499	395	82	0.67	4.81
F Pegmatite							
ORP 2020	F	1.59	277	548	55	0.01	9.96

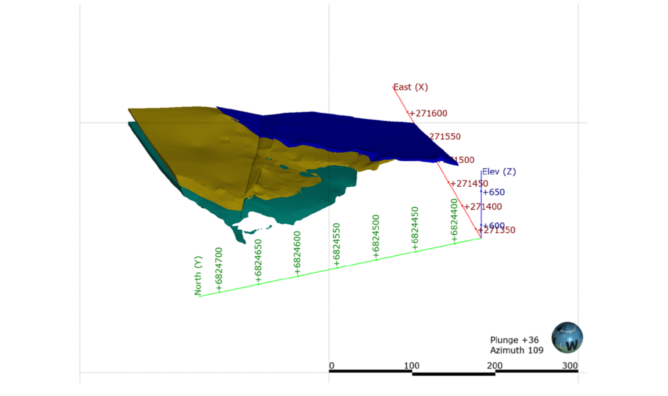
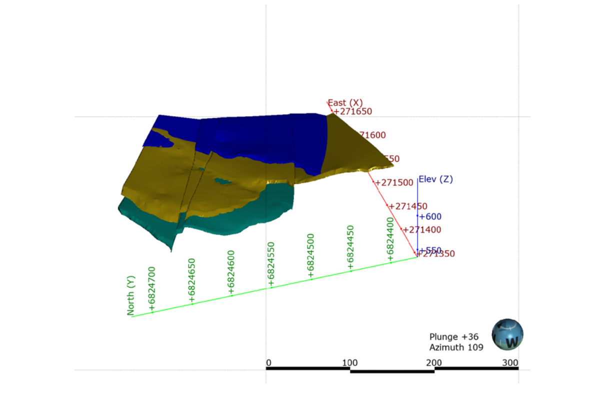
Source: ORP 2020 no cut-off

At the end of 2021, before drilling was conducted in the E Area, Snowden conducted a resource estimate for the D and F areas (refer to

Table 7.7). Drilling was subsequently carried out in the E Area, which lead to the updated resource estimate shown in this report. Here follow some reasons for the differences observed between the two latest estimates:

- Firstly, there is a part in the D Area where the D0 and D1 pegmatites converge. It isn't 100% clear whether D0 terminates against D1 on the hangingwall side, or whether D1 joins D0 on its footwall side (or if this is in fact bifurcation). In the 2021 estimate, this specific location was modelled to show that D1 terminates against D0. During the current update however, it was decided to go with the field geologists' interpretation which indicated that D0 terminates against D1. This change did not have a significant change on the overall resource estimate of the D Area, but internally assigned a large tonnage that was previously considered to be D0 to D1.

Figure 7.20 Different interpretations of the interaction between the D0 and D1 pegmatites. D0 = blue, D1 = gold, D2 = Green

2021 Interpretation	2022 Interpretation
	

- Ellipsoid dimensions for Search 3 of the Kriging process were increased from 500 x 500 x 10 m to 500 x 500 x 100 m to include all parts of the respective pegmatite that was investigated. This was to ensure that no parts of pegmatite ore were assigned "no value" in the subsequent block model.

- In both areas there were boundary changes implemented in the latest resource estimate, relative to the previous estimate. The main change in boundaries was to include the new boreholes that were drilled (mainly in the E Area, but also some additional holes in the down-dip sections of the D Area). The new boreholes also indicated areas of possible faulting that further affected the modelling boundaries. For resource estimation, these faults, as well as the intermittent stream that drains the area were used as boundaries (refer to Section 0).

- The largest difference observed when performing a reconciliation between the two latest estimates, is due to the boundary of the F Area. This was already alluded to in the point about boundary changes above. The latest drilling confirmed that the F Pegmatite extends through the hill that separates the 2021 E and F areas from one another. Therefore, this area was modelled as one large target (refer to Section 7.1).

Table 7.7 September 2021 Indicated and Inferred Mineral Resources at the Project at 236 ppm Ta_2O_5 cut-off

Classification	Pegmatite	Mass (kt)	Ta_2O_5 (ppm)	Nb_2O_5 (ppm)	Li_2O (%)
Indicated	D0	4.6	289	77	1.06
	D1	221.1	372	82	0.55
	D2	280.5	439	82	0.20
	F1	157.4	504	57	0.03
	Total	**663.5**	**431**	**76**	**0.28**
Inferred	D0	79.7	354	54	0.87
	D1	188.4	337	85	0.34
	D2	214.0	407	80	0.13
	F1	61.9	527	55	0.01
	Total	**544.0**	**389**	**75**	**0.30**
Indicated + Inferred	D0	84.3	351	55	0.88
	D1	409.5	356	83	0.45
	D2	494.4	425	81	0.17
	F1	219.2	510	56	0.02
	Total	**1,207.5**	**412**	**76**	**0.29**

Notes: Inferred Resources are based on extrapolation of 50 m beyond the last line of sampling and/or boreholes. This is reasonable based on the data density, the variogram range (about 50 m) and the observed continuity of the pegmatite orebodies from outcrop positions. The Inferred Resource comprises 45 % of the total resource tonnage.

8 SITE VISIT

Mr Matt Mullins and Mr Matthew Jarvis from Snowden visited the ORP site on 18–19 August 2021. They were accompanied by site and company senior personnel. The purpose of the visit was to familiarise themselves with the general conditions of the site, to inspect the pegmatite exposures and sampling in the field, and to view the borehole core.

A total of 211.36 m of borehole core was viewed, as shown in Table 8.1. The core has been stored in sturdy core boxes, in sturdy core racks, in a secure shed in the core yard. A diamond saw for splitting the core in good condition was viewed.

Table 8.1 Borehole core viewed in the site visit

BHID	From	To	Thick
D1-DDH01	3.63	18.24	14.61
D1-DDH03	7.52	29.87	22.35
D1-DDH04	7.61	27.68	20.07
D1-DDH05	4.93	19.55	14.62
D1-DDH06	0.00	19.20	19.20
D1-DDH07	0.00	19.72	19.72
D1-DDH08	0.00	8.09	8.09
D1-DDh09	0.00	15.14	15.14
F1-DDH02	4.43	8.14	3.71
F1-DDH03	6.64	14.31	7.67
F1-DDH04	0.00	7.89	7.89
F1-DDH06	0.00	7.73	7.73
F1-DDH07	4.53	12.20	7.67
F1-DDH08	3.97	11.00	7.03
F1-DDH09	8.65	12.39	3.74
F1-DDH10	0.00	4.51	4.51
F1-DDH11	0.00	4.36	4.36
F1-DDH12	0.00	8.58	8.58
F1-DDH13	0.00	4.97	4.97
F1-DDH16	0.00	9.70	9.70

The following general observations were made:

- The core boxes are in good condition, markings are distinct, and sample intervals are clearly shown
- The metagabbro into which the pegmatites intruded is competent, with the hangingwall sequence having a similar appearance to the footwall sequence, for each pegmatite
- Hangingwall and footwall contacts are sharply, and exhibit a distinct colour contrast
- There was no evidence of shearing or movement along these contacts
- A chill margin about 5 cm thick was observed in one hole only, indicating that the pegmatites intruded into a hot sequence
- The pegamtites themselves are white in colour, and dominated by quartz, sugary albite and micas
- Tantalite was readily observed in all the core, as small, 2–5 mm long elongated laths with sharp crystal boundaries
- Spodumene and lepidolite was observed in most of the cores.

An example of the borehole core is shown in Figure 8.1. The hole number is clearly indicated on the side of the box, as are the hole coordinates, the box from and to depths, and the sampling undertaken. The core itself is clearly marked with the sample numbers, in this case samples Y0955, Y0956, and Y0957. From the top contact, metre-thick samples were taken, with the remnant thickness at the base of the core. Samples were taken of the pegmatite itself, and no samples were taken of the host rock.

Figure 8.1 Box 2 of borehole D1-DDH02 from 3.87 m to 8.84 m

Source: Snowden site visit

Borehole depths are clearly marked by green plastic chocks, enabling the efficient calculation of borehole recovery. In this example, and in other core observed, the host rock and the pegmatites comprise competent rocks, with a high core recovery. Jointing can occasionally be viewed in the core.

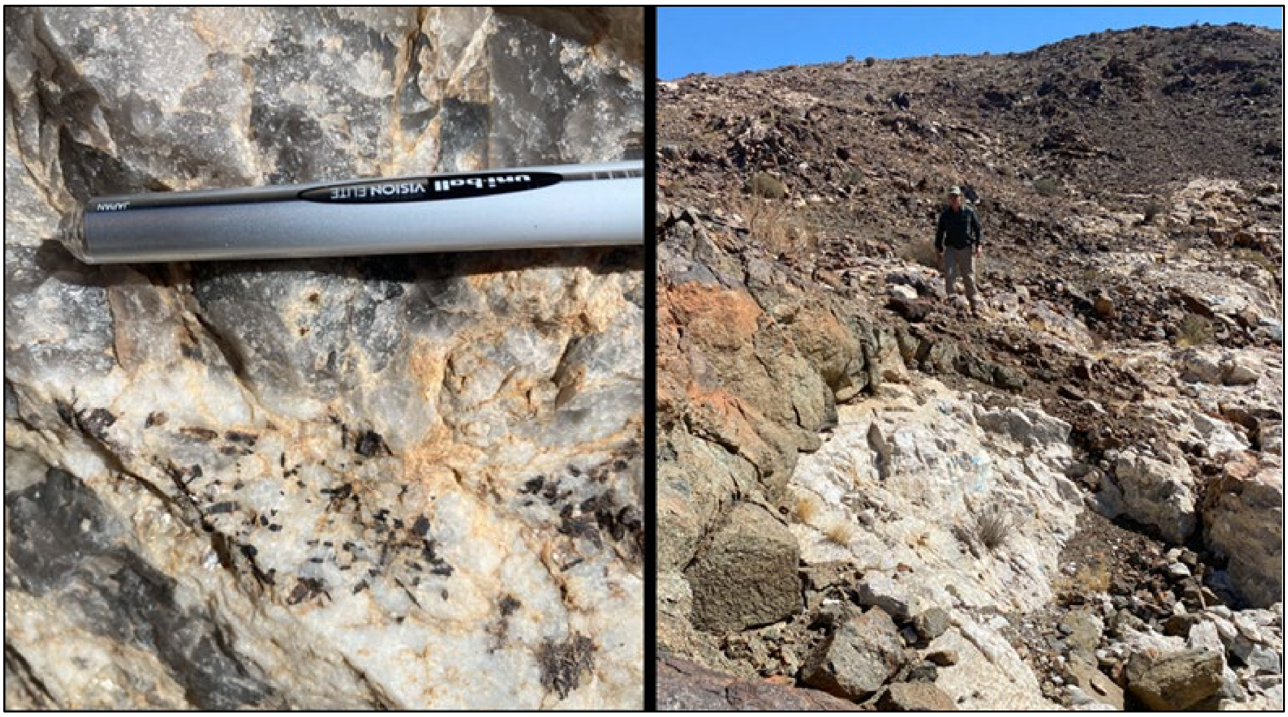
The site visit comprised a visit to the E pegmatites, the F pegmatites, and to the D pegmatites. The following observations were made:

- The pegmatites comprise regular tabular bodies, usually up to 2 m thick
- The pegmatites thin towards the lateral extents of the main pegmatite swarm, and especially towards the mylonite zone
- Hangingwall and footwall contacts are sharp, with a clear colour contrast
- Individual pegmatites are laterally extensive
- Bifurcation was observed in the D pegmatite area
- It is possible that the F pegmatite is the lateral equivalent of one of the E pegmatites
- The pegmatites are crosscut by minor post-emplacement faulting, with throws of up to 2 m
- Sampling positions and borehole collars are prominently marked
- Placer sample positions from 1981 can be clearly seen
- The vertical topographical differences were greater than expected, and will pose challenges from an access and a stripping ratio point of view
- The plant location is on a flat area to the north of the pegmatite swarm and appears to be well chosen.

Figure 8.2 shows two views of the F pegmatite. On the left is a cluster of tantalite crystals, with the pen for scale. On the right the hangingwall contact of the pegmatite can be clearly seen.

Figure 8.3 shows a view looking west of the E pegmatite swarm. The pegmatites are clearly tabular, laterally persistent, and cut by minor faulting.

Figure 8.2 **Clustered tantalite crystals (F) and the hangingwall contact of the F pegmatite, looking west**



Source: Snowden site visit

Figure 8.3 **View looking west of the E pegmatite swarm**

Source: Snowden site visit

General observations from the site visit include the following:

- Access to the site is excellent, with only the last 5 km being on recently completed dirt roads
- The proposed plant site is a well situated and chosen flat area
- Water supply will be from the Warmbad artesian wells
- The topography will be challenging
- The exploration camp, activities and offices are well organised.

9 REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION

9.1 Mining

The deposit is initially planned to be mined by opencast means, with a maximum stripping ratio of 4:1 before underground mining needs to commence. Creo estimated the following mining parameters:

- Stripping ratio (maximum stripping ratio for an open cast operation requires less than 4:1)
- Geological losses (5%)
- Mining losses (7.5%)
- Dilution (10%).

Snowden considers these parameters to be conservative.

9.2 Geotechnical constraints

No geotechnical analysis has been undertaken to date. The competent metagabbro hangingwall and footwall should allow steep (>45°) highwall slopes to be maintained, but this would need to be confirmed through a thorough geotechnical analysis. This work is currently been under taken.

No underground mining of the resource has currently been considered.

9.3 Processing and metallurgical assumptions

In November 2020, Coremet Mineral Processing analysed a 5.45-tonne bulk sample and concluded that:

- The ore was easily crushed but is highly abrasive.
- The spiral recoveries on the rougher spirals can be expected to be in the range of 70% to 80%. The lower recovery seems to be due to both liberation and particle size.
- At 76% spiral recovery and 90% MGS recovery, it will be possible to produce a Ta_2O_5 concentrate of above 20% Ta_2O_5 at a recovery of approximately 68%. This is without any optimisation and scavengers. This recovery value is slightly higher than the 65% recovery projected in the process plant study.
- Metallurgical test work on a 60-t bulk sample has been completed, results pending that should confirm these results.

9.4 Cut-off grades

Creo calculated that the breakeven cut-off grade for the pegmatite deposit was 236 ppm Ta_2O_5. Monthly production grades for the five years of open-cast mining plan reported to being above 236 ppm Ta_2O_5.

9.5 Financial model

A financial model has been produced using the ORP/Creo resource numbers and mining design parameters, showing that the project produces a positive net present value.

9.6 Environmental impacts

An independent environmental assessment (Impala, 2020) concluded that the potential negative impacts associated with the proposed mineral exploration project are expected to be low to medium in significance, apart from air quality, groundwater and some social impacts.

Provided that the relevant mitigation measures are successfully implemented by the proponent, there are no environmental reasons why the proposed project should not be approved.

The Project will have significant positive economic impacts that would benefit the local, regional and national economy of Namibia.

10 ADJACENT PROPERTIES

Kazera Global PLC (AIM listed) currently holds a 75% share in African Tantalum (Pty) Ltd (Aftan), which in turn has two wholly owned subsidiaries, Namibia Tantalite Investments (plant and operating assets) and Tameka (owner of the mining licence). Through EPL 5047, ORP has exploration rights for all the areas within the EPL boundaries and all areas surrounding Kazera's Mining Licence. The mine primarily produces tantalite, although Kazera has indicated that they are assessing the lithium potential of the ore as well. For this reason, the company instituted an exploration programme during 2017.

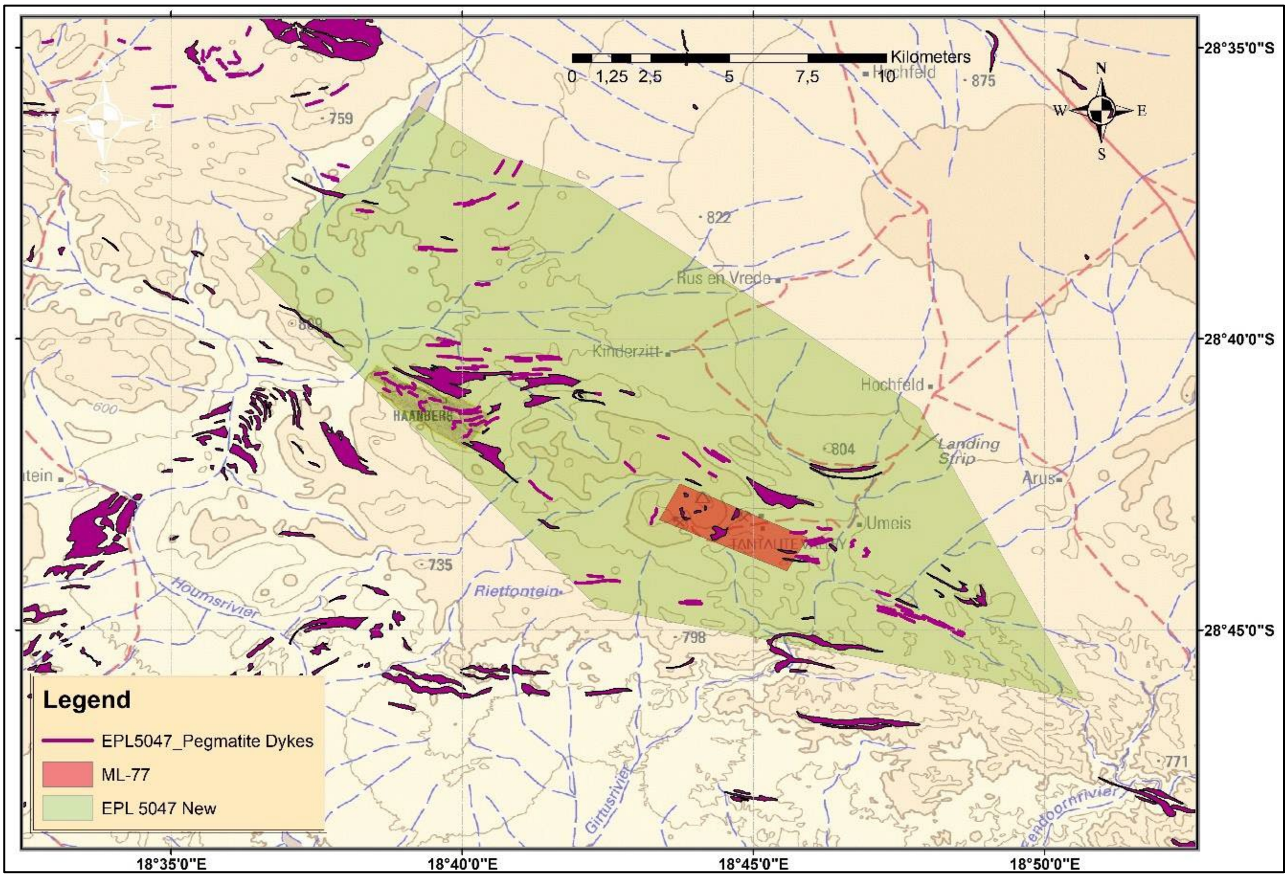
Johnson (2017) commented on a geological mapping programme on ML77 and noted that the licence largely comprised a large 7.1 km x 3.3 km black to dark green-brown gabbro intrusion formed in the right-lateral PSZ and forming an ovoid dome shaped mountain contained within paragneisses of the Namaqua Complex. The complex itself comprised mainly mica schists and quartzites.

He noted two generations of pegmatites which intruded into the gneisses and schists: older unzoned and unmineralised schistose pegmatites intruded prior to regional metamorphism and deformation. Quartz, feldspar and muscovite are their main constituents of these pegmatites; and younger coarser-grained, garnet-bearing pegmatites containing tantalite, lepidolite, spodumene and beryl as well as traces of copper and nickel, which pinch and swell and average 10 m thick.

Following the completion of this programme, Kazera announced a JORC compliant resource of 594,300 tonnes at 247 ppm Ta_2O_5 (Kazera Purple Haze Mineral Resource Statement 2019; Kazera Homestead-Mineral-Resource-Statement 2019; White City Mineral Resource 66 Statement 2019). The Inferred Resource is 501,100 tonnes at 206 ppm Ta_2O_5, and the Indicated Resource is 93,200 tonnes at 471 ppm Ta_2O_5.

The location of the Kazera lease area is shown in Figure 10.1.

Figure 10.1 Locality of ML 77 with tantalite mining

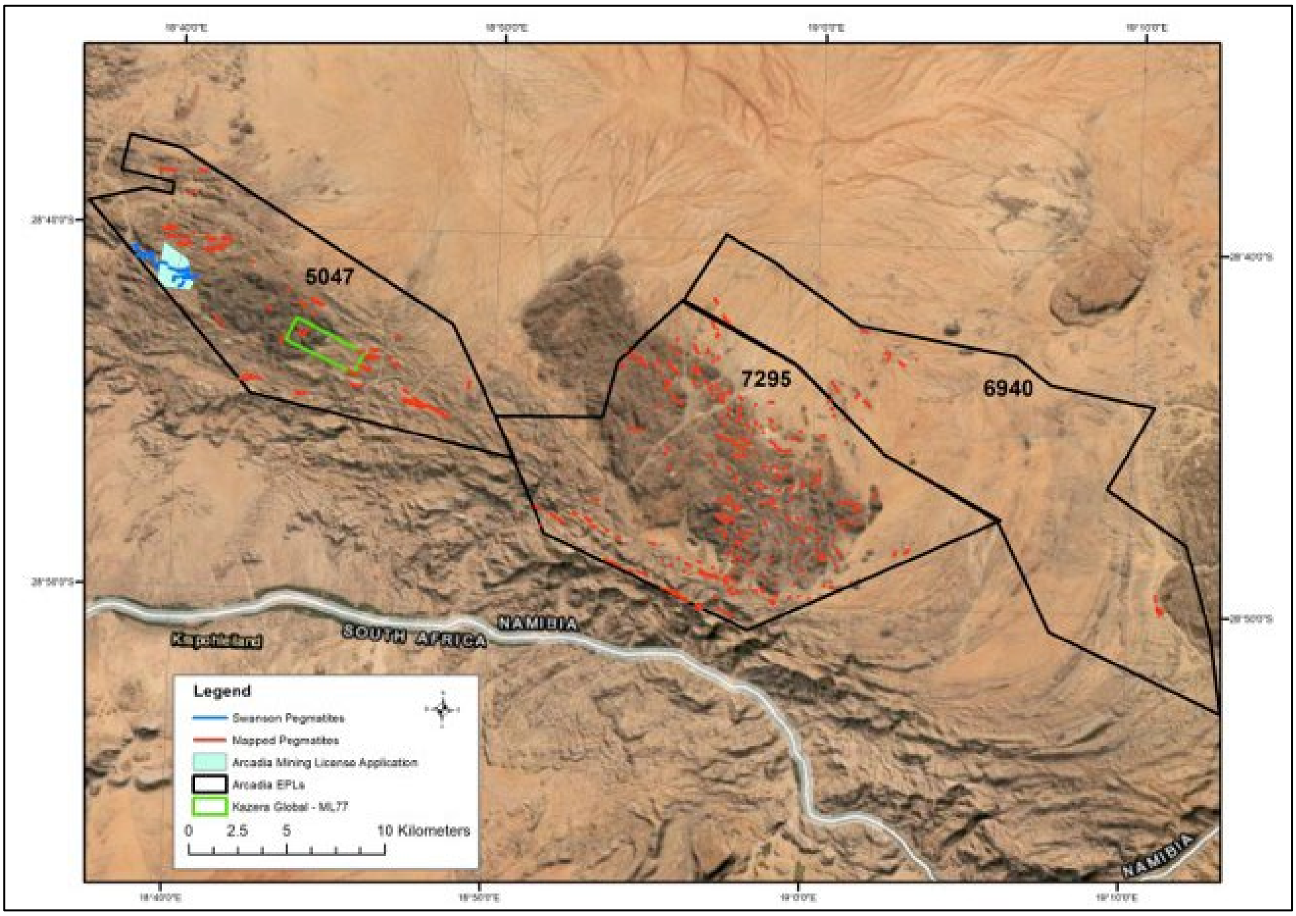


Although the mineralised pegmatites explored within EPL 5047 are currently the flagship operation of ORP, the company has extensive areas available for further exploration. The current understanding of mineralisation seems to indicate there is a potential relationship between the mafic-ultramafic complex present on EPL 5047 and ML 77 (Tantalite Valley Complex) and elevated tantalum in the associated younger pegmatites.

ORP owns the rights on EPL 6940 and EPL 7295, both located to the east and southeast of EPL 5047. Both these licences have indicative potential for mineralised pegmatites as indicated on EPL 6940 and also the Kum Kum Mafic Complex that is located on EPL 7295. The total amount of pegmatites mapped by the Council of Geoscience over the three ORP EPL's amount to more than 200 pegmatites. All indications are that the same mineralisation model present could be applicable to these areas.

The location of the known pegmatites over EPL 5047, 7295 and 6940 is shown in **Error! Reference source not found.**.

Figure 10.2 Location of mapped pegmatites over 3 EPLs



Previous exploration drilling, on ML 77 and EPL 5047 also intersected sulphide nickel mineralisation in one of the boreholes. Additional boreholes were then targeted specifically at the nickel mineralisation and this drilling confirmed a relatively thick zone with primary nickel, and secondary copper sulphide mineralisation. This, however, falls outside the scope of this report and has since been developed by ORP as a separate and stand-alone project.

11 BENCHMARKING

In 2017, the United States Geological Survey (USGS) issued a paper on niobium and tantalum as Chapter M of Critical Mineral Resources of the United States—Economic and Environmental Geology and Prospects for Future Supply. USGS noted that niobium and tantalum are transition metals that are almost always found together in nature because they have very similar physical and chemical properties. Their properties of hardness, conductivity, and resistance to corrosion largely determine their primary uses today. The leading use of niobium (about 75%) is in the production of high-strength steel alloys used in pipelines, transportation infrastructure, and structural applications. Electronic capacitors are the leading use of tantalum for high-end applications, including cell phones, computer hard drives, and such implantable medical devices as pacemakers.

Brazil and Canada are the leading producers of niobium mineral concentrates, but Brazil is by far the leading producer, accounting for about 90% of production, which comes mostly from weathered material derived from carbonatites. Australia and Brazil have been the leading producers of tantalum mineral concentrates, although recently Ethiopia and Mozambique have also been significant suppliers of tantalum. Artisanal mining of columbite-tantalite (also called coltan) is practiced in many countries.

The estimated global reserves and resources of both niobium and tantalum are large, but they are unevenly distributed geographically. According to the USGS, primary niobium and tantalum mineral deposits are found in three main types of igneous intrusive rocks:

- Carbonatites and associated alkaline rocks (niobium dominant)
- Alkaline to peralkaline granites and syenites (niobium dominant)
- Rare-metal granites and pegmatites of the LCT family (tantalum dominant) (Černý and Ercit, 2005).

Selected global niobium-tantalum deposits are shown in Figure 11.1, by deposit type

Figure 11.1 Selected niobium and tantalum mines, deposits, and occurrences, by deposit type

According to the USGS, all economically important tantalum mineralisation is related to rare-metal granites (also called rare-element granites) and LCT-type pegmatites.

LCT-type pegmatites are generally small (metres rather than kilometres in length and width) granitic intrusions characterised by extremely coarse but variable grain size and enrichments in lithium, rubidium, caesium, beryllium, tantalum, and niobium (Ta>Nb) (Černý and Ercit, 2005).

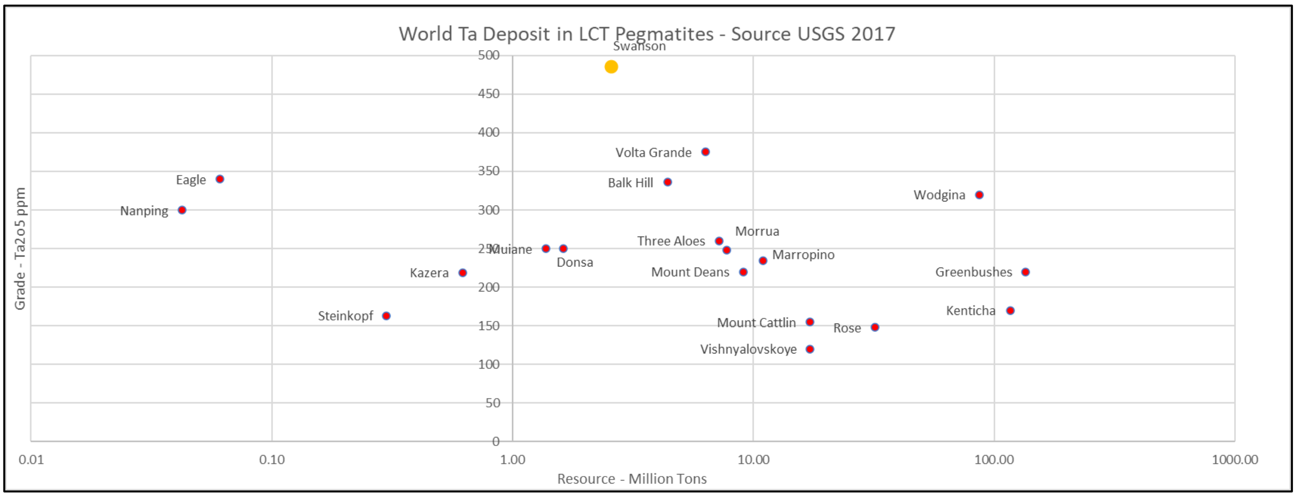
They are the products of highly fractionated and volatile-rich granitic magmas generally derived from rare-metal granites. They commonly occur in aureoles surrounding the roof of their parental granite intrusion, and the mineralised and most fractionated pegmatites are found the farthest away.

The LCT database was used for benchmarking of tantalum grades and tonnages. Niobium was not always captured in the USGS database, and was either missing or shown as not available, so niobium was left out of the benchmarking.

The ORP Project was benchmarked against these deposits:

The benchmarked study is shown in Figure 11.2. There are 18 directly comparable deposits. The weighted average grade of these 18 deposits is 234 ppm Ta_2O_5, indicating the Project grades are significantly above their global peer group and of the highest grades in the world.

Figure 11.2 Benchmarking of LCT pegmatites



Source: USGS Niobium and Tantalum: Critical Mineral Resources of the United States; Snowden analysis

A detail web search of the 18 deposits resulted that public domain information for 11 of the deposited could be obtained. Table Table 11.1 shows the public domain resource tonnes and grades for these deposits. As could be seen from the table the current MRE for Swanson is the highest grade of the 11 deposits.

Table 11.1 Benchmarked deposits

Company	Deposit	Countr	Resource Category	Resource (Mt)	Ta_2O_5 ppm	Information Source
Arcadia Minerals Limited	Swanson	Namibia	Indicated & Inferred	1.20	486	https://www.arcadiaminerals.global/wp-content/uploads/2022/02/61077892.pdf
Alliance Mineral Assets	Bald Hill	Australia	Measured & Indicated	4.40	336	https://www.boadicea.net.au/projects/eastern-goldfields/bald-hill-projects/
Global Advanced Metals	Wodgina	Australia	Measured & Indicated	86.50	320	http://clients3.weblink.com.au/pdf/MIN/02037855.pdf
Advanced Mettall ugical Group	Volta Grande	Brazil	Measured & Indicated	14.7	318	https://amg-nv.com/news/amg-advanced-metallurgical-group-n-v-announces-tantalum-mineral-resources-update-volte-grande-mine/
Noventa	Morrua	Mozambiqu e	Measured & Indicated	7.77	248	https://www.investegate.co.uk/ArticlePrint.aspx?id=201010190700115939U
Global Advanced Metals	Greenbush es	Australia	Measured & Indicated	135.10	220	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjJ26bBocjzAhXloFwKHXhPCjAQFnoECAgQAQ&url=https%3A%2F%2Fwww.igo.com.au%2Fsite%2FPDF%2F4c55e99a-9216-420d-8223-3fb28e838ff2%2FIGOinvestsinGlobalLithiumJVwithTianqi&usg=AOvVaw1Z1QBorqfTpULas_BzBGts

Company	Deposit	Countr	Resource Category	Resource (Mt)	Ta_2O_5 ppm	Information Source
Aruma Resource s Limited	Mount Deans	Australia	Indicated & Inferred	9.10	22	https://www.arumaresources.com/wp-content/uploads/2021/08/Update-on-Plans-for-Drilling-at-Mt-Deans-Lithium-Project.pdf
Kazera Resource s	Kazera	Namibia	Indicated & Inferred	0.62	219	https://kazeraglobal.com/investments/tantalite-valley-drilling-reports/
Noventa	Marropino	Mozambiqu e	Measured & Indicated	21.70	190	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj6sbfp-Lb3AhUZSvEDHYnpD48QFnoECBQQAQ&url=https%3A%2F%2Fwww2.deloitte.com%2Fcontent%2Fdam%2FDeloitte%2Fza%2FDocuments%2Fenergy-resources%2FZA_Mozambican_Cue_Card_221015.pdf&usg=AOvVaw1t_pViSaJGkmE3WSdpSRR9
Ethiopian Mineral Petroleu m and Bio-fuel Corporation	Kenticha	Etiopia	Reserve	116.40	170	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjRtLj296TzAhXRTsAKHXIjCXQQFnoECBAQAQ&url=https%3A%2F%2Fmedcraveonline.com%2FMSEIJ%2FMSEIJ-02-00076.pdf&usg=AOvVaw1n1lQioDdHGBPBqadc5cVN
Galaxy Resources	Mount Cattl in	Australia	Measured & Indicated	17.16	155	https://wcsecure.weblink.com.au/pdf/GXY/02381236.pdf
Critical Metals	Rose	Canada	Indicated & Inferred	31.90	148	https://www.cecorp.ca/wp-content/uploads/2020-05-11-news-release-CRE.pdf

12 CONCLUSIONS AND RECOMMENDATIONS

More than 200 pegmatites have been identified on three EPL's held by Orange River Pegmatite (Pty) Ltd (ORP). A total of 15 Ta_2O_5 mineralised pegmatites, Swanson swarm have been explored to date. This Mineral Resource estimate (MRE) has quantified the outcropping and shallow resources on three groups (10 pegmatites) of the pegmatites, namely the D, E and F pegmatites.

These pegmatites are of uniform thickness (generally about 1.5–2.5 m thick), are tabular, non-zoned, gently dipping, and contain tantalum, niobium and lithium mineralisation, together with quartz, sugary albite, spodumene and a number of other minerals. They intruded into competent meta-gabbros and are bound on the northern side by a northwest trending mylonitic zone.

Mineralogically the four main constituents of the pegmatites are white to grey massive quartz, crystalline perthitic feldspar, lithian muscovite, and sugary albite. Minor constituents are spodumene, beryl, lepidolite, muscovite, apatite, fluorite, biotite, tantalite and microlite. The mineralogy gives the pegmatites a whitish appearance, which contrasts strongly with the meta-gabbroic host rock.

This estimate has incorporated all geological knowledge and exploration information to 30 March 2022. Geological continuity of the pegmatites has been established through mapping and sampling (chip and channel) of surface exposures, and the extension of these pegmatites under shallow cover has been established by diamond drilling.

The thickness of the pegmatites has been established through modelling of the hangingwall and footwall contacts. Ta_2O_5 ppm, Nb_2O_5 ppm and Li_2O % grades have been estimated using ordinary kriging, with geostatistical continuity of the Ta_2O_5 grades being established through variographic analysis.

The summary Mineral Resources are shown in Table 12.1.

Table 12.1 Summary Mineral Resources for D, E and F pegmatites as at 1 May 2022

D, E and F Classification	Area	Mass kt	Ta_2O_5 ppm	Nb_2O_5 ppm	Li_2O %	Ta_2O_5 Tonnes
Indicated	Total D	568	365	87	0.270	207
	Total EF	577	578	65	0.070	334
	Subtotal	**1,145**	**472**	**76**	**0.169**	**541**
Inferred	Total D	444	365	79	0.340	162
	Total EF	995	557	69	0.050	554
	Subtotal	**1,439**	**498**	**72**	**0.139**	**716**
Comparison to September 2021						
Indicated Sept 2021	Total	664	431	76	0.280	286
Inferred Sept 2021	Total	544	389	75	0.300	212

Notes: 236 ppm Ta_2O_5 cutoff

The geological and grade continuity of the pegmatites was sufficient to classify the reasonably well-explored area as Indicated Resources, with Inferred Resources being extrapolated 50 m beyond the last line of sampling.

On the D pegmatites this MRE has identified a total of 568 kt of Indicated Resource, at an average grade of 365 ppm Ta_2O_5, 87 ppm Nb_2O_5 and 0.27% Li_2O, and a total of 444 kt of Inferred Resource, at an average grade of 365 ppm Ta_2O_5, 79 ppm Nb_2O_5 and 0.34% Li_2O. The total Indicated and Inferred Resources are 1,214 kt at an average grade of 412 ppm Ta_2O_5, 76 ppm Nb_2O_5, and 0.29% Li_2O.

On the E and F pegmatites this MRE has identified a total of 577 kt of Indicated Resource, at an average grade of 578 ppm Ta_2O_5, 65 ppm Nb_2O_5 and 0.07% Li_2O, and a total of 995 kt of Inferred Resource, at an average grade of 557 ppm Ta_2O_5, 69 ppm Nb_2O_5 and 0.05% Li_2O. The total Indicated and Inferred Resources are 1,572 kt at an average grade of 564 ppm Ta_2O_5, 67 ppm Nb_2O_5, and 0.05% Li_2O.

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14 ABBREVIATIONS

Abbreviation	Description
°	degrees
°C	degrees Celsius
3D	three-dimensional
Aftan	African Tantalum (Pty) Ltd
ASX	Australian Securities Exchange
cm	centimetre(s)
Creo	Creo Design (Pty) Ltd
CRM	certified reference material
EPL	Exclusive Prospecting Licence
g	gram(s)
g/cm^3	grams per cubic centimetre
GPS	global positioning system
HF	hydrofluoric acid
HNO_3	nitric acid
ICP-OES	inductively coupled plasma-optical emission spectroscopy
kg	kilogram(s)
kt	thousand tonnes
LCT	lithium-caesium-tantalum
Li	lithium
Li_2O	lithium oxide (or lithia)
m	metre(s)
mm	millimetres
MRE	Mineral Resource estimate
Mt	million tonnes
Nb	niobium
Nb_2O_5	niobium pentoxide
NNMP	Namaqua Natal Metamorphic Province
NYF	niobium-yttrium-fluorine
ORP	Orange River Pegmatite (Pty) Ltd
PGE	platinum group element
Placer	Placer Development Ltd
ppm	parts per million
PSZ	Pofadder Shear Zone
QAQC	quality assurance/quality control
REE	rare earth element
SG	specific gravity
Ta	tantalum
Ta_2O_5	tantalum pentoxide
USGS	United States Geological Survey

Appendix A
JORC Tables 1 to 3

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 down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report.* *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	Sampling was undertaken using industry standard practices and consist of large-scale chip and channel sampling and diamond drilling by ORP during 2020 and 2022. All 52 drillholes were drilled vertically. 234 samples were taken from the core of the drilling campaign. Orange River Pegmatite (Pty) Ltd (ORP) conducted reconnaissance chip sampling and channel sampling during 2018. Samples were between 220 g and 6 kg. A total of 283 samples consisting of 204 channel and 79 chip samples were taken from 15 pegmatites during 2019. The average sample weight is 7.5 kg. Three additional samples were taken for mineralogy testwork. An additional 15 samples collected from different pegmatite feldspar types. All drillhole and sample locations are mapped in WGS84 UTM zone 34S. During 1981 Placer Development Ltd (Placer) collected 91 channel samples with an average weight of 14.22 kg. Bulk samples were taken at four locations, with 3–5 tonnes of material being obtained through drilling and blasting.
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	52 vertical diamond drillholes were drilled at ten pegmatites. The drillholes are HQ with a 63.5 mm∅ core. The holes were drilled with a 50 m strike spacing on drill lines and have a total core length of 1 568.92 m. The depth of the holes ranged from 4.36 m to 134.81 m.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Core recovery in the mineralised pegmatite was more than 90% due to the competent nature of the pegmatite bodies and even in the fractured country rock minimal core loss was recorded. Core loss was recorded as part of the operational procedures where the core loss was calculated from the difference between actual length of core recovered and penetration depth measured as the total length of the drill string after subtracting the stick-up length. Measures taken to maximise sample recovery and ensure representative nature of the samples is not recorded in available documents. No apparent bias was noted between sample recovery and grade.
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.*	All drillholes were fully logged. The core, channel and chip samples have been logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.

Criteria	JORC Code Explanation	Commentary
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. *The total length and percentage of the relevant intersections logged.*	The total length of the intersected pegmatite logged is 198.87 m and the percentage is 13% of total core drilled. It is assumed that the Placer samples have been logged according to industry standards at the time; however, the specific logging techniques used are not stated in available documents. These samples information were also not use for the MRE.
Subsampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all subsampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Three field duplicate samples of previously field channel sample F1_3, F1_25 and F1_37 were collected on the F pegmatite. The samples were dry. At the laboratory the samples were crushed to 2 mm. A 200 g subsample of the crushed material was taken to be milled in a carbon milling pot to 90% <75 micron. Samples consisted of half core, with the core being split using a saw. Approximately 200–220 g of sample was taken per drilled mineralised metre was recovered. Half core samples were also taken for comparison purposes. No information is available on subsampling techniques and sample preparation by Placer, because such procedures are not recorded in available documents.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	The samples were analysed at Scientific Services (Pty) Ltd, a laboratory based in Cape Town, South Africa. At the laboratory, the samples were crushed to 2 mm. A 200 g subsample of the crushed material was taken to be milled in a carbon milling pot to 90% <75 micron. 0.25 g of the milled material was prepared and analysed through inductively coupled plasma-optical emission spectroscopy (ICP-OES) analysis for tantalum, niobium, and lithium. The samples are measured against standards. ORP added a total of 25 standards and the laboratory added an additional nine standards to the samples. The standards used are AMIS0339, AMIS0340, AMIS0342, AMIS0355 and AMIS0408. A total of 17 blanks AMIS0439 (Blank Silica Chips) were added to the samples. The two samples were submitted to the Sci-Ba Laboratories in England where the samples were subjected to petrographic and x-ray diffraction (XRD) analyses at the University of Southampton. The Standard Method BS EN 12407-2007, natural stone method was used for a petrographic investigation of the samples. All quality assurance/quality control (QAQC) samples plotted within acceptable analytical limits as defined for their type (i.e. certified reference materials – CRMs). No reporting issues were identified with any labs in question.

Criteria	JORC Code Explanation	Commentary
		It is assumed that industry best practices were used by the laboratories to ensure sample representivity and acceptable assay data accuracy, however, all the QAQC procedures used are not recorded in available documents.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	All samples and data were verified by the ORP exploration geologist. The database was structured in a format suitable for importing into ArcGIS and 3D modelling software. Snowden reviewed all available sample and assay reports and is of the opinion that the electronic database supports the field data in almost all aspects and suggests that the database can be used for resource estimation. Verification was done by comparing drilling results with the closest channel sample data for each borehole. All sample material was bagged and tagged on site as per the specific pegmatite it was located on. The sample intersections were logged in the field and were weighed at the sampling site. All hard copy data-capturing was completed at the sampling locality. All sample material was stored at a secure storage site at the company site office. The original assay data has not been adjusted.
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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	The sample locations are global positioning system (GPS) captured using WGS84 UTM zone 34S. All drillholes collars used for the MRE were surveyed by a qualified surveyor, African Geomatics in February 2022 with the accuracy being 20 cm.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	The drillholes were drilled at the two locations involving ten pegmatites with sections spaced 50 m apart with 50 m strike spacing on drill lines. For the channel and chip samples, each sampling point was carefully selected according to the physical quality of a sample point, normally on a 15 m, 25 m or 50 m interval, depending on the sample density required. The data spacing and distribution of the drillholes channel and chip sampling is insufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Where pegmatites had a true thickness of >2 m, the channel samples were accordingly split into an equal length “top” and “bottom” channel sample. ORP prioritised the importance of bulk-pegmatite properties. Therefore, these channel sampling results were composited (i.e. weighted average of the entire intersection). The Placer samples were spaced on a 100 m grid.

Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	All holes were all drilled vertical. The channel and chip samples were also taken vertically from top to bottom of the pegmatites. Channel sampling conducted on pegmatite faces approximate right-angle intersections relative to the dip of the pegmatite at that specific location and thereof are unbiased by excessively oblique intersections. The tantalite is very fine and mostly not visible; therefore, no bias could take place when selecting the sample position. Orientation of the Placer sampling data in relation to the geological structure is not known, because it is not recorded in available documents.
Sample security	*The measures taken to ensure sample security.*	ORP maintained strict chain-of-custody procedures during all segments of sample handling, transport and samples prepared for transport to the laboratory are bagged and labelled in a manner which prevents tampering. Samples also remain in ORP's control until they are delivered and released to the laboratory. An export permit was obtained from the Namibian Mining Department to transport the samples across the border. Measures taken by Placer to ensure sample security have not been recorded in available documents.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The deposit was visited by the Creo Competent Person during 2019 and Snowden during 2020. The visit was specifically to review the recent sampling campaign, and to review the sampling and assay procedures being used by the Company. Creo and Snowden considers that given the general sampling programme, geological investigations, check assaying and, in certain instances, independent audits, the procedures reflect an appropriate level of confidence.

2 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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	EPL 5047 is located in the Karas region, southern Namibia, near the South African border, and approximately 15 km to the north of the Orange River. The EPL is held by ORP and is 14,671 hectares in size. ORP also obtained an Environmental Clearance Certificate on 4 April 2019 from the Ministry of Environmental and Tourism. A land-use agreement, including access to the property for exploration has been signed with the owners of the farms Norechab 130, Kinderzit 132 and Umeis 110
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Swanson Enterprises held various claims on the farms Kinderzit and Umeis on EPL 5047 and mined tantalite, beryl, spodumene and tungsten on these claims in the 1970s to early 1990s.

Criteria	JORC Code explanation	Commentary
		A Canadian company, Placer, also conducted detailed exploration in this area between 1980 and 1982. The Geological Survey of Namibia in collaboration with the Council of Geoscience of South Africa conducted a detailed mapping programme (1: 50,000 scale) over large parts of Southern Namibia including EPL 5047 (2012 to 2017).
Geology	*Deposit type, geological setting and style of mineralisation.*	Mineralisation is in the form of pegmatites of the lithium-caesium-tantalum (LCT) type which intruded granitic gneisses, metasediments and gabbroic-troctolitic rocks of the Tantalite Valley Complex. The primary mineral commodities occurring are tantalum (Ta_2O_5) and spodumene $LiAl(SiO_3O)_2$.
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.* *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.*	Drill results have been described in the report. All relevant data is included in the report.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Information about data aggregation is not stated in the available documents.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').*	The drillholes were all drilled vertical, with the pegmatites dipping on average 12.33° to the southeast. The pegmatite thickness intercepted range from 0.1 m to 9.62 m.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	The appropriate diagrams and tabulations are supplied in the main report.

Criteria	JORC Code explanation	Commentary
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	This report has been prepared to present the obvious targets and results of historical and recent exploration activities
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.*	ORP conducted reconnaissance and later detailed geological mapping to identify and prioritise targets. ORP appointed Asset Mapping Solutions (Pty) Ltd, a Cape Town based company, to conduct a detail drone survey of the Swanson prospect area in 2018. African Geomatics, a Windhoek based survey company conducted a more detail drone survey of the Swanson area in 2022.
Further work	*The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	The next exploration and assessment phases should be aimed at establishing a resource base into hopefully an “Indicated” category, as well as undertaking the necessary research into markets and recovery processes in order to support a feasibility assessment for the project. The pegmatite bodies not explored yet should be mapped and sampled and mineralised pegmatites should be drilled to expand the existing resources base.

3 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.* *Data validation procedures used.*	A copy of the RAW database provided by the client was kept unedited for auditing purposes of edits conducted. Overlapping intervals, duplicates and other errors were flagged by Leapfrog modelling software and corrected. Collar elevations were checked relative to the LiDAR-generated topographic surface. Further visual checks were also conducted to ensure a clean database for modelling and estimation; that data was in spatially in valid locations. Statistical analyses were carried out to see if data lies within valid ranges, and to identify possible outliers.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	Matt Mullins (Lead Competent Person) undertook a site visit on 17–19 August 2021. He was accompanied by site personnel, senior company executives, and by Matthew Jarvis from Snowden. The borehole core, overall geological setting, and the nature and mineralisation in the pegmatites was observed in detail.

Criteria	JORC Code explanation	Commentary
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	The geological interpretation is that the tabular pegmatite bodies were formed by anatexis within existing fracture planes in the host gabbroic orebody. In terms of their geometry, most of the pegmatites at the Swanson deposit have a general northeast-southwest strike, with shallow dip angles (10-20˚) to the southeast. One of the pegmatites, however, has a different strike from the rest of the pegmatites investigated. Pegmatite 'F1' strikes approximately 148˚ and dips on average at 14˚ to the northeast. The pegmatites are sub-horizontal tabular orebodies within the host gabbro, with clearly defined and sharp hangingwall and footwall contacts. Mineral Resources were defined within the well explored D and E-F pegmatite zones, respectively. These pegmatites can be traced on surface at the kilometre scale, and have been confirmed with diamond drilling intersects, so there is a high level of confidence in the geological interpretation. They are uniform in thickness over large distances. Tantalum and niobium grades are uniformly distributed within individual pegmatites and vary slightly between different pegmatites. In both areas investigated, the highest lithium grades occur in the pegmatites highest up in the sequence (D0 and E7, respectively). The data used comprised mapping data, borehole diamond drilling, channel sampling of outcrops, and chip sampling. "Bars" and/or structures that influence the termination or displacement of pegmatites have been interpreted from available mapping and drilling information.
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 pegmatite orebodies show a high degree of lateral continuity and can be traced in outcrop over the kilometre scale. The extension of the pegmatite bodies beyond the outcrop positions has been confirmed by diamond drilling. Down-dip continuation of all the shallower pegmatites has been confirmed by diamond drilling. This tendency is expected for the lower E-pegmatites as well but must be proven with additional deep boreholes.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	The pegmatite hangingwall and footwall contacts were modelled in Leapfrog software. Based on mapping information, it appears as if D0 terminates against the hangingwall side of D1 in some areas. This relationship was shown in the modelling but could also be the result of bifurcation of a single pegmatite. Minor north-northwest-striking faults that dip steeply to the northeast were observed in both the D and the E-F areas. Notes by the ORP field geologists suggest normal movement along these faults, however, similar vertical offsets of dipping pegmatites could have occurred through sinistral strike-slip kinematics. More information is needed to confirm the true sense of movement, but the apparent downthrow is to the north of these structures.

Criteria	JORC Code explanation	Commentary
	Any assumptions behind modelling of selective mining units. *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	Each pegmatite was modelled separately, and as no zoning was apparent, either physically of from the chemistry, these were grade modelled as a single unit. The interpolation parameters were based on the variogram parameters. The Snowden Supervisor and Leapfrog Edge software was used for exploratory data analysis and for the variography. Ordinary kriging was used to estimate grades. No mining has taken place. The economics are based on the recovery of tantalum alone. Recovery assumptions are 67% Ta. Although economic concentrations of lithium are present, these were not considered. Niobium is present in solid solution in the tantalum. This was taken into account in the metallurgical testwork. The block size used was 10 m x 10 m x 2 m. It was assumed that the SMU would be equivalent to the block size. As the entire pegmatites were considered to be economic, no selective mining is envisaged. The pegmatites exhibit extremely sharp hangingwall and footwall contacts with the country rock, and these contacts were modelled as accurately as possible in the Leapfrog software. Any issues picked up during the validation were fixed immediately in the source data, to prevent reloading the same errors at a later stage. However, no edits were made to the copy of raw data.
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 basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The minimum cut-off was determined to be 237 ppm Ta_2O_5.
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 assumed that the mining method would be by opencast mining. Because of the extremely sharp contacts, and the clear colour differential between the orebody and the host rock, no mining dilution was included.
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.*	In November 2020, Coremet Mineral Processing analysed a 5.45-tonne bulk sample and concluded that The ore was easily crushed but is highly abrasive. The spiral recoveries on the rougher spirals can be expected to be in the range of 70% to 80%. The lower recovery seems to be due to both liberation and particle size.

Criteria	JORC Code explanation	Commentary
		At 76% spiral recovery and 90% MGS recovery, it will be possible to produce a Ta_2O_5 concentrate of above 20% Ta_2O_5 at a recovery of approximately 68%. This is without any optimisation and scavengers. This recovery value is slightly higher than the 65% recovery projected in the process plant study.
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.*	An independent environmental assessment concluded that: The potential negative impacts associated with the proposed mineral exploration project are expected to be low to medium in significance, apart from air quality, groundwater and some social impacts. Provided that the relevant mitigation measures are successfully implemented by the proponent, there are no environmental reasons why the proposed project should not be approved. The project will have significant positive economic impacts that would benefit the local, regional and national economy of Namibia.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	ORP determined the specific gravity (SG) of the samples by using the Archimedes principle on 147 chip samples that were collected from all six pegmatites from the targeted pegmatite swarm. The SG of each sample was calculated using the formula SG = (weight in air) / (weight in air – weight in water). This technique measures the volume of a sample by water displacement and density is then calculated as the ratio of mass to volume. No bulk density has been measured because the SG is considered appropriate as an input into the orebody model. It was found that the 147 samples have an average SG of 2.64. This is the SG that was used for reporting.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	Resources in the E-F Area were classified on a distance from sample basis. A boundary "shell" was created around sampled borehole traces that were used for the estimation – this includes boreholes and channel samples. A steeply dipping north-northeast-striking fault forms the southern boundary of this classification system for the E-F Area, whereas the intermittent stream that drains the area forms the eastern and northern boundaries. Resources within this boundary were classified to have an Indicated confidence level. Based on the average variogram range for the Li_2O, a buffer of 50 m was created around the boundary shell described above. Pegmatite deposits within the 50 m buffer were classified as Inferred. Any deposits beyond the 50 m buffer are considered "Unclassified" and were not included in this resource report.

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		A similar classification method was used for the D Area, but instead of using a "shell" around the borehole traces, a polygon around the borehole collars was projected vertically downward. The reason for using the shell approach in the E-F area was to take into consideration shallower holes that did not intersect the lowermost E pegmatite layers. Applying the same resource classification method in the E-F area that was used in the D Area would give unrealistically high confidence to these lower pegmatites, with shallow holes drilled above them, but not into them.
views	*The results of any audits or reviews of Mineral Resource estimates.*	No audits or reviews were conducted.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The relative accuracy of the estimate is based on the geological and statistical continuity of the tabular pegmatites. The pegmatites can be traced in outcrop over tens to hundreds of metres, and their continuity has been confirmed by surface boreholes. Grade continuity has been confirmed through geostatistical analysis. The Indicated Resource forms a firm basis for global mine planning and for economic assessment of the orebodies.