QEM
ASX : QEM

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Tim Wall

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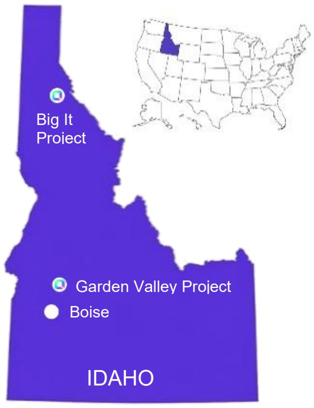
Daniel Harris

Big It Tungsten Project and Garden Valley Niobium Project

- Tungsten & Antimony
- Niobium, Tantalum & REE



Julia Creek Vanadium and Energy Project

- Vanadium
- Oil Shale

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ASX Announcement

10 September 2026

Post Acquisition Review of Garden Valley Project Identifies Significant Rare-Metal Opportunity

Highlights:

→ **Garden Valley Project represents a highly prospective U.S. rare-metal pegmatite project with exceptional coarse rare-metal mineralisation documented in historical government records**

→ **Historical Vaught-Peck mine reportedly produced approx. 500 lbs of columbite and identified a substantial zoned pegmatite (250 ft long, at least 200 ft wide) providing a priority target**

→ **Multiple additional mineralised pegmatite occurrences across the Project provide district-scale exploration upside, with no systematic modern exploration or drilling completed**

→ **Garden Valley Project is prospective for multiple U.S. critical minerals including: niobium, tantalum and REE — providing potential to address significant U.S. supply chain vulnerability**

→ **United States has not had any significant mining of niobium or tantalum since the late 1950s with the U.S. reported as 100% net-import reliant on both metals**

Critical minerals explorer and developer QEM Limited (ASX: QEM) ("**QEM**" or "**Company**") is pleased to announce that it has completed a detailed review and compilation of available historical geological, mining and exploration information for the Garden Valley Project (formerly known as the Columbite Project) located in central-west Idaho, USA, for the purpose of identifying early exploration targets and activities.

This follows the acquisition of all shares in Freshwater Metals Pty Ltd ("**Freshwater**")[2], the owner of two critical minerals exploration projects: Big It and Garden Valley projects. Big It is a past producer of tungsten, and is also prospective for antimony and gold, while the Garden Valley Project hosts the Vaught-Peck prospect which is prospective for niobium, tantalum and other rare earth elements (REE).

1 *https://www.reuters.com/world/china/trump-launches-12-billion-minerals-stockpile-counter-china-bloomberg-news-2026-02-02/*

2 *Refer to the announcement dated 19 August 2026 titled "Completion of Idaho Projects Acquisition' for details of the transaction*

Commenting on the Garden Valley project, Managing Director Robert Cooper said,

"The compilation of the data for Garden Valley (formerly named Columbite) demonstrates the clear exploration potential for the highly prospective, underexplored niobium and tantalum system, and provides a platform from which QEM can plan and undertake exploration activities. Combined with the Big It Project, the Garden Valley Project positions the Company at the forefront of several tightening critical mineral global supply chains. With niobium constrained by extreme supply concentration and the tantalum market increasing, we see a unique potential for QEM to address the U.S. critical minerals supply chain crisis, and ultimately becoming a domestic producer of these critical minerals in the United States to feed a growing market."

Review Highlights

- **Garden Valley Project represents a highly prospective U.S. rare-metal pegmatite project**

  Multiple historically documented niobium (columbite), tantalum-bearing rare-metal and rare earth elements (REE) mineral occurrences across the Garden Valley claim package.

- **Historical Columbite Mine represents the priority target**

  Historical USGS work documented a large, strongly zoned pegmatite approx. 250 ft long and at least 200 ft wide, tested by a approx. 150 ft underground tunnel beneath a prominent quartz core.

- **Exceptional coarse rare-metal mineralisation historically reported**

  Includes recovery of a 309 lb columbite-bearing crystal associated with an approximately 100 lb samarskite crystal, demonstrating the capacity of the pegmatite system to develop very coarse concentrations of niobium-bearing and REE-bearing minerals.

- **Multiple additional mineralised pegmatites provide district-scale exploration upside**

  Reporting of historical columbite, samarskite and/or euxenite at the Bowman and Mirandeborde prospects, together with rare-earth oxides at Mica Dome.

- **Historical exploration was limited and largely confined to surface/underground prospecting**

  Principal occurrences were documented during mid-20th-century investigations with no systematic modern exploration programmes having been undertaken to define the scale, continuity or geochemical characteristics of the broader pegmatite field.

- **Clear pathway to rapidly advance the Project**

  Programmes to commence with geological and structural mapping, systematic rock and soil geochemistry and modern geophysics, followed by potential drilling of priority targets, including Vaught-Peck, Bowman and Mirandeborde.

Historical Information Disclosure – Garden Valley

The historical information reported in this announcement is derived principally from historical data compiled from U.S. Government and Idaho State geological reports, historical mine and prospect records and project files. QEM has reviewed supporting records including historical geological mapping, underground workings plans and descriptions of historical exploration, mineral occurrences, and reported historical results.

The historical information has not been independently verified by QEM where historical sampling or assay results are reported, or where complete details of sample location, sample dimensions, representativity, sampling and preparation methodology, analytical techniques, laboratory procedures and QAQC have generally not been identified in the historical records reviewed. Accordingly, the reliability and repeatability of individual historical results cannot be established to modern reporting standards.

Historical descriptions of mineralisation, mineral occurrences, workings and reported assay results should therefore be regarded as indicative of the geological and exploration potential of the Project only and should not be interpreted as demonstrating the grade, continuity or economic significance of mineralisation, or as representing a current Mineral Resource or Ore Reserve. Further work, including field verification, geological and structural mapping, systematic sampling and drilling, is required to confirm the nature, extent, continuity and grade of mineralisation.

Garden Valley Project

Overview

Since announcing the completion of the Freshwater acquisition, QEM has undertaken a more detailed review and compilation of the available historical information for the Garden Valley Project (Figure 1). This work has focused on better defining the geological setting of the project, the nature and structural controls of mineralisation, historical mining, previous surface exploration and sampling, and the broader regional geological context.

The Garden Valley Project covers a cluster of historically recognised rare-element pegmatite prospects in the Garden Valley area of Boise County, Idaho (Figure 2). Previous announcements have identified the potential for fluorspar with this project, however this deeper review of the data shows the fluorspar potential to be less significant, and so the focus of the project will be on exploration for the other elements previously identified in niobium, tantalum and REE.

Historical government work records pegmatites hosted by granodioritic rocks of the Idaho Batholith and containing combinations of columbite, samarskite, euxenite, monazite, mica and feldspar. The principal documented occurrence is the Vaught-Peck (or Vaught Columbite) prospect, where intermittent historical mining reportedly recovered approximately 500 lb of columbite (niobium). Other prospects within the broader project area include Mica Dome, Bowman, Mirandeborde, and Nevada Nos. 1–4. The key elements for each of these prospects are shown in Table 1. Collectively, these occurrences support exploration for a broader Nb-Ta-REE-bearing pegmatite field.

The principal Nb-Ta ore minerals at the Garden Valley Project are columbite-tantalite, associated with granitic rocks and granitic pegmatites located on the southwest margin of the Idaho Batholith, a known metallogenic province. Niobium (Nb), historically known as columbium, and tantalum (Ta) commonly occur together, with niobium typically present at higher grades. Both are important specialty metals, with niobium principally used in high-strength steels and specialty alloys, while tantalum has applications in gas turbines, electronic capacitors, cell phones and computers, cemented carbides and optical products. Critically, significant U.S. mine production of niobium and tantalum has not been reported since 1959, with the United States reported as 100% net-import reliant on both metals[3].

The historical information is significant principally because rare-metal minerals are reported from several separate pegmatite occurrences rather than from a single isolated working. Vaught-Peck provides the strongest evidence of rare-metal enrichment and historical production, while Bowman and Mirandeborde record columbite-samarskite-bearing pegmatites and, at Bowman, euxenite. Mica Dome provides additional evidence for differentiated pegmatites with minor rare-earth oxides.

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[3] *U.S. Geological* Survey (2022), *Mineral Commodity Summaries 2022*, U.S. Geological Survey, 202 p., DOI: 10.3133/mcs2022; U.S. Geological Survey, *Niobium and Tantalum Statistics and Information*.

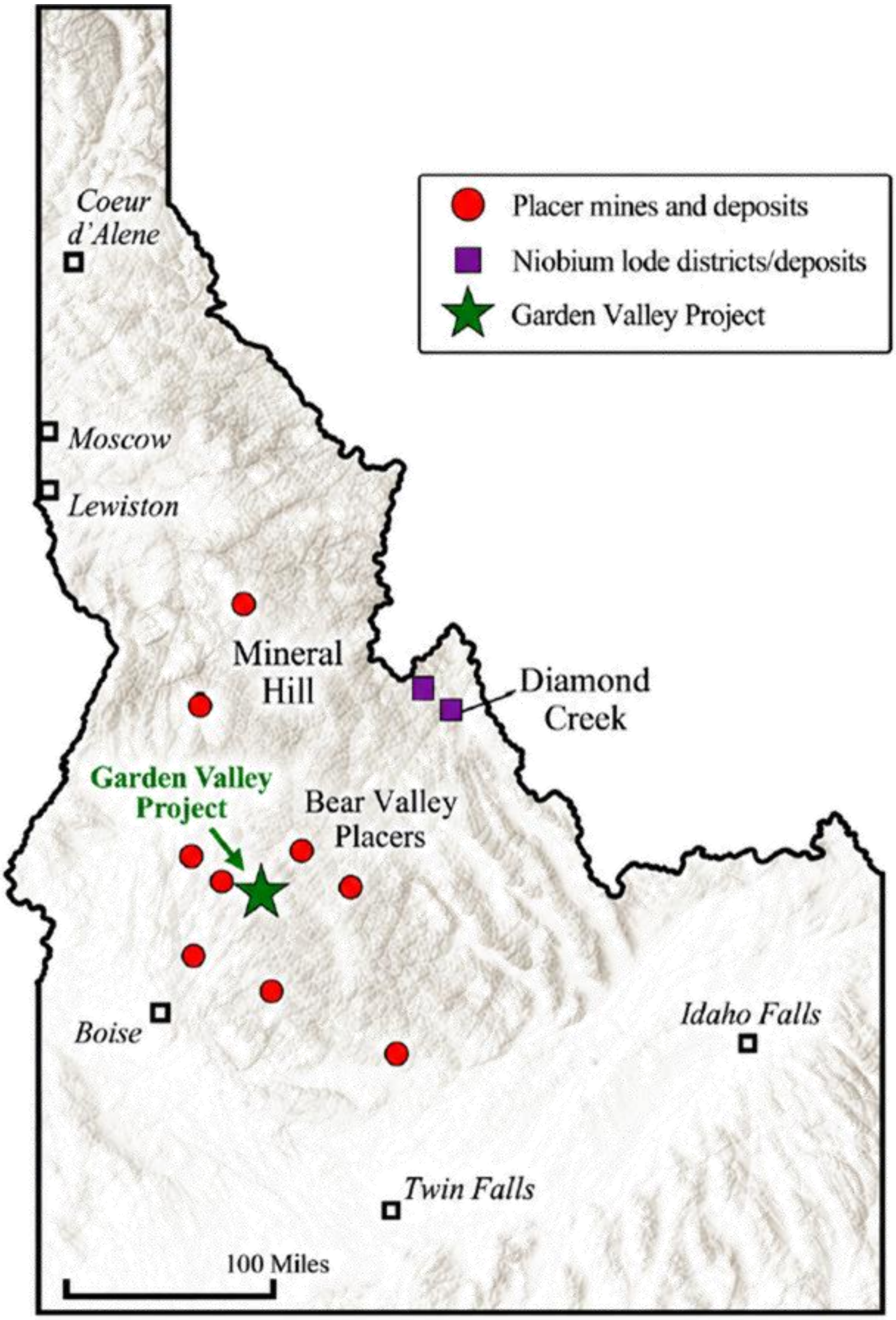

Figure 1: Project Location and Regional Niobium and Tantalum Prospects

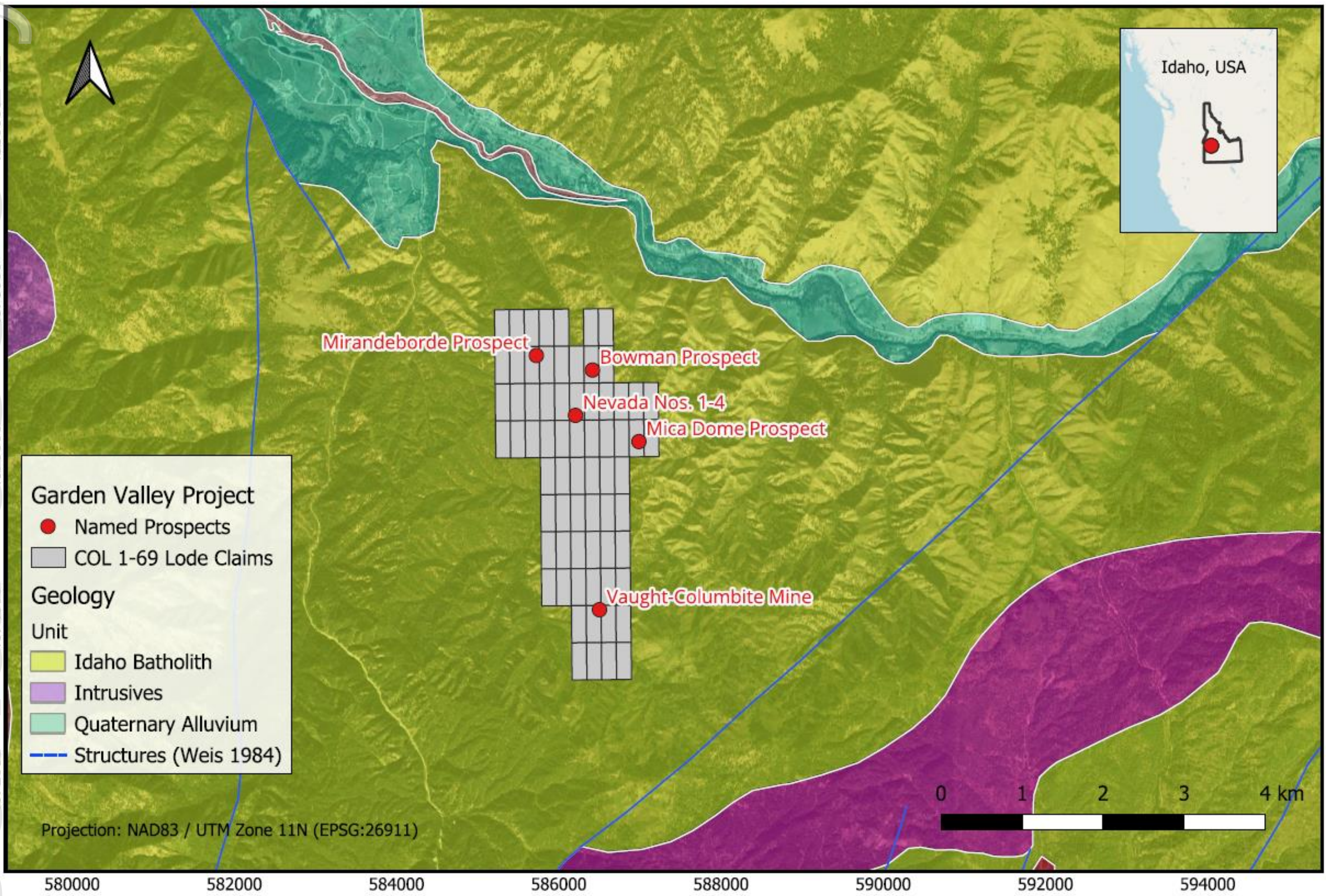

Figure 2: Garden Valley COL Claims 1-69, with main Prospects highlighted

Table 1: Summary of main prosects associated with the Garden Valley Project

Prospect	Rare-metal minerals	Historical description	Exploration significance
Vaught-Peck / Columbite	Columbite, samarskite, monazite; mica and feldspar	Principal historic working; zoned pegmatite with pits/open cuts and underground development. Historical production of ~500 lb columbite reported	Highest-priority historical occurrence; demonstrates significant local rare-metal fractionation and coarse Nb-Y-REE mineral development
Mica Dome	Minor rare-earth oxides; muscovite and feldspar	Two pegmatites with plagioclase-quartz-muscovite wall zones and quartz cores; historically assessed for mica/feldspar	Supports the presence of multiple differentiated pegmatites across the project area
Bowman	Columbite, samarskite and euxenite (Y, REE)	Three prospect pits on small pegmatite bodies reported at approximately 3–15 ft wide	Strong rare-metal mineralogical indicator; priority target despite historically narrow exposed bodies
Mirandeborde	Columbite and samarskite; mica and feldspar	Pits and short adits expose narrow pegmatites through approximately 300 ft of vertical relief	Evidence for repeated mineralised pegmatites over a material vertical interval; potentially important target corridor
Nevada Nos. 1–4	Reported REE- and U-associated phases in modern compilation	Poorly exposed pegmatitic occurrences identified in modern project compilations; detailed primary historical information is limited.	Reconnaissance target requiring field verification, mapping, radiometrics and geochemistry

Vaught-Peck (also known as Vaught Columbite / Peck / Columbite Group)

Vaught-Peck is the best documented and most significant historical prospect within the Garden Valley Project area. Stoll (1950)[4] described the Vaught prospect, also known as the Peck prospect and Columbite Group. The exposed pegmatite was reported to have been mined intermittently for columbite and mica from about 1900. Historical accounts cited by Stoll record approximately 500 lb of total columbite production. Subsequent Idaho compilation work also records an exceptional 309 lb composite crystal comprising a columbite-rich inner zone and samarskite outer zone, illustrating the capacity of the pegmatite system to develop very coarse rare-metal mineralisation.

The pegmatite is strongly zoned and historical descriptions identify a graphic-textured perthite-quartz wall zone, intermediate plagioclase-quartz-muscovite and microcline-rich zones, and a quartz core. Columbite, samarskite and monazite occur as scattered fine- to coarse-grained masses within the plagioclase-quartz-muscovite pegmatite. Production is reported to have been intermittently worked for columbite and mica from 1900 until at least 1950. Historical records describe small-scale mining from surface and underground workings, although comprehensive production records and total historical production have not been identified.

Historical work at Vaught/Columbite[5] describes an exposed pegmatite approximately 250 ft long and at least 200 ft wide, with a quartz core about 175 × 50 ft, plunging approximately S10°E at 15–20°. A 150 ft long tunnel was developed beneath the quartz core, with historical mapping documenting a distinct pegmatite zonation and the occurrence of columbite and samarskite; the samarskite is reported as uranium-bearing. Critically, records the recovery of a 309-lb crystal in August 1950, comprising an inner columbite zone surrounded by an outer samarskite zone, accompanied by an approximately 100-lb samarskite crystal[5].

Vaught-Peck therefore represents the clearest historical proof-of-concept target within the Project, although the historical information does not demonstrate modern resource-scale continuity or grade.

Mica Dome Prospect

Historical work describes two pegmatites at the Mica Dome claims[5]. The pegmatites comprise fine- to medium-grained plagioclase-quartz-muscovite wall zones surrounding quartz cores. A small tonnage of plagioclase and scrap mica was recognised, and minor rare-earth oxides were reported. Two pegmatites were exposed in bulldozer trenches and two short tunnels the western body was approx. 60 ft wide with approx. 150 ft of along-slope exposure. Compared with Vaught-Peck, the historical documentation is less indicative of concentrated niobium mineralisation; however, the occurrence is important because it demonstrates additional zoned and differentiated pegmatites within the same broader Garden Valley field.

Bowman Prospect

Three historical pits were excavated at Bowman on relatively small pegmatite bodies ranging from approx. 3 to 15 ft in width. The pegmatite was described as a fine-grained intergrowth of microcline, quartz and muscovite with accessory columbite, samarskite and euxenite[5]. The largest pegmatite was 15 ft wide, striking N45°W and dipping 75–80°E with columbite, samarskite and euxenite reported.

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[4] *Stoll, W.C. (1950). Mica and Beryl Pegmatites in Idaho and Montana. U.S. Geological Survey Professional Paper 229, 64 p*

[5] *Fryklund, V.C. Jr. (1951). A Reconnaissance of Some Idaho Feldspar Deposits, With a Note on the Occurrence of Columbite and Samarskite. Idaho Bureau of Mines and Geology Pamphlet 91*

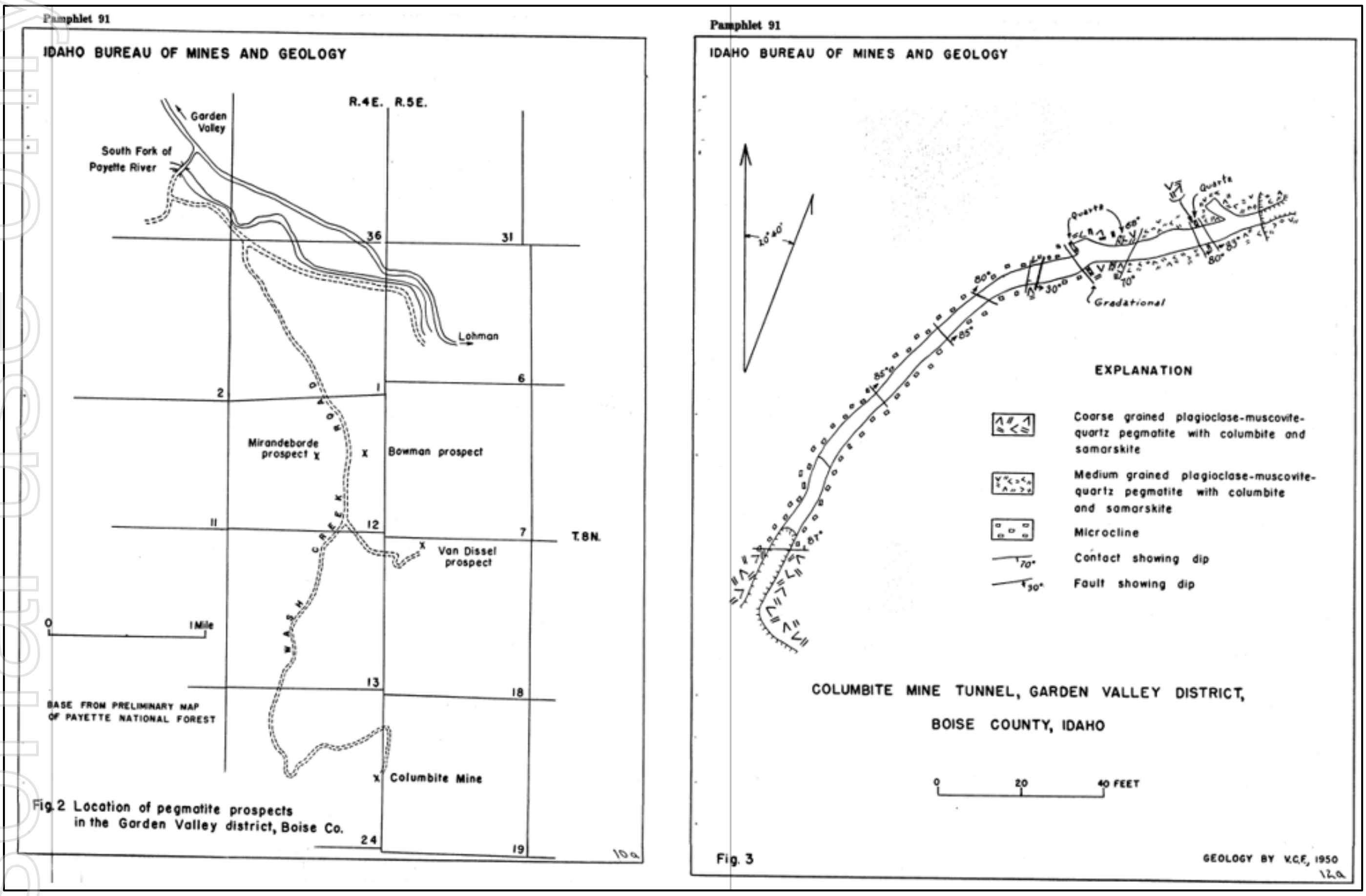

Figure 3: Garden Valley prospect-location map (left) - plots the Columbite Mine, Bowman prospect, Mirandeborde prospect and Van Dissel prospect together, and detailed Columbite Mine tunnel plan (right) maps the underground drive, pegmatite contacts, faults//contact dips and the internal pegmatite mineralogy[5].

The presence of several Nb-Y-REE-bearing accessory minerals makes Bowman one of the more technically significant historical targets after Vaught-Peck. The principal limitation is the relatively narrow width of the pegmatites exposed by the historical workings; the proposed modern exploration programme should therefore test for thicker, repeated or concealed pegmatite bodies along the broader trend.

Mirandeborde Prospects

The Mirandeborde prospects contain pits and short adits exposing narrow pegmatite bodies through approximately 300 ft of vertical relief. Historical descriptions distinguish feldspar-quartz wall zones and quartz-muscovite-feldspar cores containing minor columbite and samarskite. The occurrence of multiple mineralised pegmatites over a substantial vertical interval is potentially important because it supports a pegmatite-swarm concept rather than a single isolated surface body. The prospect was noted to consist of a series of roughly east-west striking pegmatites developed by pits and short tunnels with columbite and minor samarskite reported. Exposed bodies were 2–4 ft wide, intersected by smaller pegmatites at both high and low angles, with workings covering about 300 ft vertically.

Mirandeborde warrants integrated mapping along with Bowman to determine whether the occurrences form part of a common structural or intrusive corridor. An historical channel sample from one of the prospect tunnels was reported to have assayed 1% columbium (niobium)[5]. The historical result has not been independently verified by QEM and details of the sampling methodology, analytical method and QAQC are not available.

Nevada Nos. 1–4

The Nevada Nos. 1–4 occurrences are included in modern project compilations as poorly exposed pegmatitic veins with reported rare-earth and uranium association. The occurrence is recorded by the Idaho Geological Survey (CH0708) with rare-earths and uranium as commodities. The underlying US Bureau of Mines mineral property file referenced by the IGS record has not been sighted by QEM and no specific mineral species have been identified in the historical sources reviewed. They should therefore be treated as lower-confidence reconnaissance targets, and initial field verification will focus on confirming the location and geometry of individual pegmatites, radiometric response, mineralogy and systematic multi-element geochemistry.

Exploration Significance and Prospectivity

The principal exploration opportunity is the potential for a broader rare-element pegmatite system containing multiple Nb-REE-bearing pegmatite bodies with potential for associated tantalum within the Idaho Batholith. Historical records establish rare-metal mineralogy at several separate prospects and demonstrate that at least one occurrence, Vaught-Peck, produced columbite on a small historical scale. The Bowman and Mirandeborde prospects extend the evidence for columbite-samarskite-bearing pegmatites beyond the principal historic workings, while Mica Dome records additional differentiated pegmatites[5].

Historical exploration was predominantly based on surface exposure, pits, trenches, short adits and limited underground development. The available records do not indicate systematic modern exploration of the entire pegmatite field using detailed geological and structural mapping, modern multi-element geochemistry, radiometrics/geophysics, and drilling. Accordingly, the principal upside is not simply re-evaluation of the old workings but testing whether the known occurrences represent surface expressions of a larger and more continuous rare-element pegmatite system.

On the information presently available, Vaught-Peck (Nb-Ta-Y) is the highest-priority historical target. Bowman and Mirandeborde form the next priority group due to their reported Nb-Y-REE mineralogy and multiple pegmatite occurrences. Mica Dome provides additional evidence of pegmatite differentiation, while Nevada Nos. 1–4 require more fundamental verification.

Exploration Programme and Ranking

The historical information documents several rare-element-bearing pegmatites spread across the claim area: Vaught-Peck, Bowman and Mirandeborde all contain reported columbite and/or samarskite, while Bowman also contains euxenite; Mica Dome contains REE-bearing material. The historical workings tested individual exposed pegmatites, commonly with pits, short adits or trenches, but there is little indication of modern systematic exploration designed to determine the number, continuity, thickness or geochemical fertility of the broader pegmatite swarm.

The proposed exploration strategy for the Garden Valley Project will be designed to systematically evaluate the known historical rare-element pegmatite occurrences and determine whether these represent isolated mineralised bodies or components of a broader Nb-Ta-REE prospective pegmatite system; an initial ranking of the prospects and the rationale behind this is shown in Table 2.

Table 2: Initial target ranking for Garden Valley Project prospects

Priority	Target	Principal rationale
1	Vaught-Peck	Best documented mineralised pegmatite; historical columbite production; strong internal zonation; reported columbite-samarskite-monazite mineralogy and substantial historical workings.
2	Bowman	Multiple pegmatites with reported columbite, samarskite and euxenite; historical pits and recorded pegmatite orientation provide an immediate basis for follow-up mapping.
2	Mirandeborde	Multiple mineralised pegmatites exposed by pits/adits through ~300 ft vertical extent; reported columbite and samarskite; potentially forms a broader target corridor with Bowman.
3	Mica Dome	Additional differentiated/zoned pegmatites and reported minor REE enrichment; useful test of the broader pegmatite-field model.
4	Nevada Nos. 1-4	Potential additional pegmatitic occurrences but comparatively poorly documented; requires field verification and geochemical/radiometric assessment.
5	Verner	Geological and rare-metal association currently poorly constrained; lower priority pending field verification.

Initial exploration will likely focus on the historically better-defined Vaught-Peck, Bowman and Mirandeborde prospects, before progressively extending across the wider claim package. Bowman and Mirandeborde are particularly prospective as their spatial relationship and occurrence of multiple mineralised pegmatites provide an opportunity to test for a broader multi-body corridor, whereas Vaught-Peck provides the strongest historical evidence of rare-metal differentiation and historical small-scale niobium production.

Cautionary Note

Historical grades reported in this announcement refer to historical exploration results and do not represent estimates of Mineral Resources or Ore Reserves and none of the disclosed figures should be relied upon as such. This summary compiles historical information from government publications and secondary project material. Historical production, dimensions, mineral occurrences and descriptions have not been independently verified in this announcement.

Market Background

Niobium - Supply Concentration Risk

The sustained demand for high-strength low-alloy (HSLA) steel in construction and automotive manufacturing is anchoring the expansion of the niobium market – micro-additions of the element raise tensile strength by up to 30% while preserving weldability of the steel. Steel alloy production accounting for 92.05% of the niobium market share in 2025[6]. There is also rising interest in niobium-doped battery anodes, quantum-grade superconductors, and hydrogen-ready pipeline steels which is broadening end-market diversity, and cushioning the niobium market against potential slowdowns in the steel cycle. As such the niobium market size is expected to grow from 79.68 kilotons in 2025 to 83.19 kilotons in 2026 and is forecast to reach 103.18 kilotons by 2031[6].

[6] *https://www.mordorintelligence.com/industry-reports/niobium-market*

A single Brazilian company (CBMM) controls approx. 75% of global niobium supply[7] – the highest single-company concentration of any critical mineral on earth. CBMM recently restricted access to strategic investors, highlighting sovereign supply risk. The U.S. has imported 100% of its niobium needs since 1959 – no domestic production in living memory[8]. Supply-side diversification efforts in Canada and the United States aim to mitigate geopolitical risk tied to Brazil's dominance and to reinforce domestic critical-minerals strategies.

<u>Demand Drivers – Steel & Energy Transition</u>

- HSLA steel using niobium is now mandatory in modern military vehicles, naval vessels, and aerospace frames.
- Niobium-based superalloys are used in jet engine turbine blades (F-35, F-22) and next-generation hypersonic platforms all require it.
- "Lightweighting" push in both the automotive and shipbuilding industries.
- Niobium is emerging as a solid-state battery anode material with NioCorp and others racing to secure supply.
- Pipeline build-out for hydrogen and LNG transmission globally.
- Global niobium demand projected to grow 6–8% CAGR through 2030 driven by electric vehicles, steel, defence, and energy transition[9].

Tantalum - Supply Volatility

Tantalum is used in electronics circuitry in various forms, products, and applications. The three primary devices for which it is used in the electronics industry are capacitors, semiconductors, and surface acoustic wave (SAW) filters. Consumer electronics and automotive systems drive substantial consumption with automotive electronics predicted to be the fastest-growing segment at 5.89% until 2031[10]. The tantalum capacitors market size is expected to grow from USD 1.33 billion in 2025 to USD 1.39 billion in 2026 and is forecast to reach USD 1.73 billion by 2031 at 4.47% CAGR over 2026-2031[10].

In the United States, tantalum is predominantly utilised in the manufacturing of capacitors, which account for over 60% of its end uses, due to their high energy storage capacity in compact sizes. These capacitors are essential for smartphones, laptops, automotive electronics, and pacemakers.

Mining and extraction are concentrated in regions like Brazil, Australia, Russia, and Central Africa. Ore inflation and tight powder supply chains have recently driven significant component price increases (up to 30%) across major capacitor manufacturers like KEMET and Panasonic[10].

<u>Demand Drivers – Consumer Electronics & EVs</u>

- Capacitors and semiconductors used in consumer electronics, with the miniaturisation of electronic devices and the surge in 5G smartphone production driving consumption.
- Automotive systems also drive substantial consumption with automotive electronics the fastest-growing segment – electric vehicles require heavy electronic integration and robust bulk decoupling capacitors.

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[7] *https://pmarketresearch.com/chemi/niobium-products-market/*

[8] *https://pubs.usgs.gov/periodicals/mcs2023/mcs2023-niobium.pdf*

[9] *Grand View Research – Niobium Market Analysis*

[10] *https://www.mordorintelligence.com/industry-reports/tantalum-capacitors-market*

- Expansion of aerospace and defence electronics with high-temperature superalloys using tantalum for aircraft engine parts, nozzles, and defence systems.
- Being biocompatible and non-reactive with bodily fluids makes pure tantalum ideal for medical implants and prosthetics such as surgical mesh, artificial joints and other orthopaedic devices, and cranial plates.
- Inert against most acids except hydrofluoric acid and hot sulfuric acid, making it ideal for corrosion-resistant equipment such as chemical reaction vessels, heat exchangers, and piping for harsh chemicals.
- Roughly 40% of global concentrate originates from conflict-affected zones like the Democratic Republic of Congo (DRC) and Rwanda[10], prompting regulatory oversight and supply chain shifts toward ethically sourced alternatives.

ENDS

This announcement was authorised for release on the ASX by the Board of QEM Limited.

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Competent Persons Statement

The information in this announcement that relates to Exploration Results is based on information compiled by Roderick Watt, who is a full-time employee of QEM Limited and a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM), Membership No. 109266.

Mr Watt has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

Mr Watt consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

APPENDIX A: JORC Code, 2012 Edition – Table 1

The historical information reported in this announcement is derived principally from U.S. Government and Idaho State geological publications, historical mine and prospect records, maps and available project files. QEM has reviewed supporting records including historical geological mapping, underground workings plans and descriptions of historical exploration and mineral occurrences; however, the historical information has not been independently verified by QEM and, in many cases, predates modern exploration, analytical and QAQC standards.

Where historical sampling or assay results are reported, complete details of sample location and dimensions, representativity, sampling and preparation methodology, analytical techniques, laboratory procedures and QAQC have generally not been identified in the historical records reviewed. Accordingly, the reliability and repeatability of individual historical results cannot be established to modern reporting standards. Historical mineral occurrences, dimensions and descriptions should therefore be regarded as indicative only and should not be relied upon as representing a current Mineral Resource or Ore Reserve. Further work, including field verification, geological and structural mapping, systematic sampling, modern analytical and mineralogical work and drilling, is required to confirm the nature, extent, continuity and grade of mineralisation.

Section 1 Sampling Techniques and Data – Garden Valley

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	▪ *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* ▪ *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* ▪ *Aspects of the determination of mineralisation that are Material to the Public Report.* ▪ *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	The announcement principally reports historical geological observations, mapped pegmatites, historical workings and reported mineral occurrences compiled from U.S. Government and Idaho State geological publications and available project records. No new analytical sampling results are reported in this announcement. Fryklund (1951)[5] reported that a historical channel sample from one of the Mirandeborde prospect tunnels assayed 1% columbium. No further information regarding the channel sample dimensions, sampling procedure, sample preparation or representivity has been identified in the historical report reviewed by QEM and the result has not been independently verified. The result should therefore be regarded as indicative historical information only.source. Historical reports describe mineral occurrences and, in some instances, historical prospecting and sampling; however, complete details of historical sampling techniques, sample representivity and sample locations are generally not available. The historical information therefore cannot be assessed against modern sampling standards and is treated as historical and indicative only. QEM proposes systematic geological mapping, field verification and representative rock/channel sampling as part of the initial exploration programme.

Criteria	JORC Code explanation	Commentary
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).*	No drilling reported. The historical information reviewed to date principally relates to surface exposures, prospect pits, trenches and underground workings.
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.*	No drilling reported.
Logging	▪ *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* ▪ *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* ▪ *The total length and percentage of the relevant intersections logged.*	No drilling reported. Historical U.S. Government and Idaho State reports contain geological descriptions and mapping of pegmatites, host rocks, mineral assemblages, prospect pits and underground workings. The level and consistency of historical geological documentation varies between prospects and is not equivalent to modern systematic geological logging.
Sub-sampling techniques and sample preparation	▪ *If core, whether cut or sawn and whether quarter, half or all core taken.* ▪ *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* ▪ *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* ▪ *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* ▪ *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* ▪ *Whether sample sizes are appropriate to the grain size of the material being sampled.*	No new analytical results are reported. Complete information regarding historical field sampling, sub-sampling and sample-preparation procedures is not available for the historical information reviewed. Accordingly, sample representivity and the appropriateness of historical sample preparation cannot be established. QEM has not independently verified historical sampling.
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.*	No assay results are reported in this announcement. Historical descriptions of columbite, samarskite, euxenite, monazite and other minerals are derived from historical geological reports. Complete analytical methods, laboratory procedures and QAQC documentation supporting all historical mineral identifications are not available. Accordingly, the historical mineral descriptions are considered indicative until confirmed by modern analytical, mineralogical and mineral-chemistry work.

Criteria	JORC Code explanation	Commentary
	▪ *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.*	
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.*	The historical geological information has not been independently verified by QEM. Information has been compiled from U.S. Government and Idaho State geological publications, historical maps, workings plans, mine/prospect records and available project files. The analytical method, laboratory, detection limits and QAQC procedures associated with the historical Mirandeborde channel sample reported by Fryklund (1951) are not documented in the information reviewed by QEM. The reported 1% columbium result has not been independently verified and should be regarded as indicative historical information only.
Location of data points	▪ *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* ▪ *Specification of the grid system used.* ▪ *Quality and adequacy of topographic control.*	No modern verification sampling or drilling has been completed by the Company to date. Field verification, systematic sampling and geological/structural mapping form part of the proposed initial work program.
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 historical geological observations and prospect locations are irregularly distributed and reflect the nature and extent of historical prospecting rather than systematic modern exploration. No systematic analytical sampling or drilling dataset is reported and the available information is not sufficient to establish grade continuity or support Mineral Resource or Ore Reserve estimation. No sample compositing is reported.
Orientation of data in relation to geological structure	▪ *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* ▪ *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Historical geological mapping provides information on the orientation, geometry and zonation of certain pegmatites, including mapped contacts, quartz cores and underground development. The available historical information is insufficient to establish whether historical sampling was unbiased or representative of the pegmatites or mineralisation. Modern structural/geological mapping and appropriately oriented sampling and drilling will be required to assess geometry and continuity.
Sample security	▪ *The measures taken to ensure sample security.*	Not applicable to the historical geological information reported. No new QEM samples or analytical results are reported in this announcement.
Audits or reviews	▪ *The results of any audits or reviews of sampling techniques and data.*	QEM has undertaken a desktop review and compilation of available historical information, including key U.S. Government and Idaho State geological reports and historical maps/plans. No independent audit of the historical exploration information has been undertaken. Historical information remains subject to field verification and modern exploration.

Section 2 Reporting of Exploration Results – Garden Valley

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	▪ *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* ▪ *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	The Garden Valley Project is located in Boise County, Idaho, USA and comprises 69 unpatented Federal lode mining claims. The claims are subject to applicable U.S., Federal and State requirements. QEM intends to maintain the claims in good standing in accordance with applicable requirements.
Exploration done by other parties	▪ *Acknowledgment and appraisal of exploration by other parties.*	Historical exploration and geological investigation of the Garden Valley pegmatites was undertaken principally during the mid-20th century. Key published sources reviewed by QEM include Stoll (1950), U.S. Geological Survey Professional Paper 229, and Fryklund (1951), Idaho Bureau of Mines and Geology Pamphlet 91, together with subsequent government compilations and available project records. Historical work included geological mapping, prospecting, pits, trenches and underground development. Fryklund (1951) documented the Columbite Mine (Vaught-Columbite/Vaught-Peck), Bowman, Mirandeborde and Van Dissel (Mica Dome) prospects within the Garden Valley district and provided geological descriptions and mapping of several pegmatites. The Idaho Geological Survey Database of the Mines and Prospects of Idaho (DD-1 v1.2023) records niobium, tantalum and rare-earth commodities at the Vaught-Columbite occurrence (IGS record CH0712). This database attribution does not constitute modern quantitative assay confirmation of tantalum mineralisation. Certain historical occurrence records rely on underlying source documents that have not been sighted by QEM, including the US Bureau of Mines mineral property file referenced by the IGS record for Nevada Nos. 1–4 (CH0708). Commodity attribution at this occurrence has therefore not been independently verified. The historical work predates modern JORC reporting standards and has not been independently verified by QEM.
Geology	▪ *Deposit type, geological setting and style of mineralisation.*	The Project lies within granitic rocks of the Idaho Batholith and contains multiple historically documented granitic pegmatites. Historical reports describe locally differentiated and zoned pegmatites composed principally of quartz, feldspar and mica, with rare-metal minerals including columbite, samarskite, euxenite and monazite reported at various prospects. At the historical Columbite Mine, Fryklund (1951) described three adjacent pegmatites and a well-zoned principal pegmatite with a prominent quartz core and intermediate zones containing columbite and samarskite. Additional rare-metal minerals were historically reported at Bowman, Mirandeborde and Mica Dome.

Criteria	JORC Code explanation	Commentary
		The historical mineral assemblage supports prospectivity for Nb-Ta-REE and associated rare-metal mineralisation. QEM considers classification of the pegmatite system using modern rare-element pegmatite terminology to require further geochemical, mineralogical and mineral-chemistry work.
Data aggregation methods	▪ *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g cutting of high grades) and cut-off grades are usually Material and should be stated.* ▪ *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* ▪ *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No analytical assay intervals, aggregate analytical results, metal-equivalent values or grade truncations are reported in this announcement. Historical descriptions of mineral occurrences and pegmatite dimensions are reported from the source documents and are not presented as representative grades or tonnages.
Relationship between mineralisation widths and intercept lengths	▪ *These relationships are particularly important in the reporting of Exploration Results.* ▪ *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* ▪ *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	No drilling intersections or analytical mineralised widths are reported. Dimensions and orientations quoted for historical pegmatites, quartz cores and workings are derived from historical geological mapping and descriptions. These dimensions describe geological bodies or historical development and should not be interpreted as mineralised intercept widths, true widths or evidence of continuous economic mineralisation.
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.*	Figures accompanying the announcement show the project location, current claim package, historically documented prospects and relevant regional/project geology. Historical map locations and geometries are approximate unless subsequently field verified. Any georeferenced historical information used in current GIS interpretation should be regarded as interpretive pending ground verification.
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.*	The announcement presents the material historical geological information available to QEM relevant to assessing the exploration potential of the Project. Historical descriptions of rare-metal minerals, pegmatite dimensions and workings are reported with appropriate qualification. No implication is made that the reported historical mineral occurrences, crystal sizes or pegmatite dimensions represent continuous economic mineralisation, representative grades or tonnages. No modern analytical assay or drilling results are reported.

Criteria	JORC Code explanation	Commentary
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.*	At the historical Columbite Mine (Vaught-Columbite/Vaught-Peck), Fryklund (1951) described three adjacent pegmatites. The principal exposed pegmatite was described as the lower part of an oval body approximately 250 ft (76 m) long and at least 200 ft (61 m) wide, with a quartz core approximately 175 ft (53 m) long and 50 ft (15 m) wide and approximately 150 ft (46 m) of tunnel development beneath the quartz core. These are historical mapped/described geological dimensions and do not represent dimensions of economic mineralisation. Stoll (1950) reported that the Vaught prospect had been intermittently worked for columbite and mica since approximately 1900 and, based on information attributed to J.G. Vaught, reported total historical columbite production of approximately 500 lb. Comprehensive historical production records have not been identified by QEM and the reported production figure has not been independently verified. Fryklund (1951) also reported recovery in August 1950 of a 309 lb (~140 kg) crystal described as having an inner columbite zone and outer samarskite zone, accompanied by an approximately 100 lb (~45 kg) samarskite crystal. These historical observations have not been independently verified by QEM and should not be interpreted as representative grade or tonnage. Additional columbite, samarskite and/or euxenite occurrences were historically described at Bowman and Mirandeborde, with rare-earth oxide minerals reported at Mica Dome. Historical reports indicate multiple pegmatites across the Garden Valley district, providing the basis for broader field verification and target generation.
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.*	A staged exploration programme will be proposed, initially focused on verification and target definition rather than resource or development studies. Phase 1 will include field verification and accurate survey of historical prospects and accessible workings where safe and practicable; detailed geological and structural mapping; systematic rock-chip/channel sampling; modern multi-element geochemistry; and mineralogical/mineral-chemistry studies. Initial priority areas include Vaught-Columbite, Bowman and Mirandeborde. Phase 2 will include systematic surface geochemistry and where appropriate high-resolution geophysical surveys, potentially including airborne magnetics and radiometrics, integrated with geology, structure, geochemistry and mineralogy to define priority targets and assess the broader pegmatite field. Subject to results, Phase 3 should comprise drilling of the highest-ranked targets to test pegmatite geometry, continuity, depth extent and the distribution and tenor of rare-metal mineralisation.

The Company confirms that the historical geological information reported in this appendix has not been independently verified. Supporting historical records have been reviewed where available, but the information remains subject to the limitations described in this Table 1 and is considered indicative only pending field verification and the carrying out of modern exploration and geological mapping and sampling programmes.