

# ATEX Announces Results of Second Metallurgical Program Further Demonstrating Outstanding Recoveries for Copper and Gold at Valeriano, Phase V Drill Program Underway with Fourth Rig Being Mobilized

Toronto, Ontario--(Newsfile Corp. - December 11, 2024) - **ATEX Resources Inc. (TSXV: ATX)** ("**ATEX**" or the "**Company**") is pleased to announce the results of its second metallurgical program completed at the Valeriano Project. The program was conducted by Base Metallurgical Laboratories in Kamloops, British Columbia using mineralized sample material selected from drill core collected during the Phase III and IV drill campaigns at the Valeriano Project ("**Valeriano**" or the "**Project**") located in Atacama Region, Chile. The Company is also pleased to provide an exploration update on its Phase V drill program.

ATEX's second metallurgical testwork program continues to demonstrate that the conceptual process flowsheet being developed for Valeriano is robust and comparable with other world class copper porphyry projects. Metallurgical performance exceeded expectations for all three domains tested including previously untested hole ATXD26 mineralization.

## HIGHLIGHTS:

- **ATTRACTIVE COPPER AND GOLD RECOVERIES** - Robust total copper and gold recoveries ranging from 92% to 95% and 90% to 97% respectively, in line with the first metallurgical program testwork results; the results of the first metallurgical program were reported on [October 18, 2023](#).
- **COARSER GRINDING DOES NOT IMPACT RECOVERIES** - Valeriano material is amenable to SAG and ball milling. Coarsening of the primary grind from 120 µm to 200 µm was achieved during the second metallurgical program with no negative impact on recoveries and to 165 µm on hole ATXD26 material, which will have a positive impact on projected processing costs.
- **MARKETABLE CONCENTRATE GRADES** - Concentrate grades of up to 33% Cu and up to 15 g/t Au present a very marketable product to copper smelters globally.
- **NEGLECTIBLE DELETERIOUS ELEMENTS** - Deleterious elements in concentrate are immaterial.
- **POTENTIAL FOR SEPARATE MOLYBDENUM CONCENTRATE** - Separation of copper and molybdenum could produce a saleable molybdenum concentrate, and there is significant molybdenum upside for the epithermal zone that warrants further investigation.

"We are very encouraged by these results, confirming again that Valeriano is a simple orebody with an uncomplicated circuit that can produce a high quality, clean concentrate utilizing conventional recovery methods," stated Ben Pullinger, President, and CEO of ATEX. "The copper and gold recovery results from this program have exceeded our expectations, and the high quality of the concentrate would be well received by global smelters. Coarsening of the grind size with no impact to recoveries will be very beneficial to future project economics with significant potential benefits to capital and operating costs. We also continue to make progress on our Phase V drill program with a fourth rig currently being mobilized and a fifth rig expected to be added in January."

## Overview

In June 2024 a second phase metallurgical testwork program was designed and scoped by Libertas Metallurgy and ATEX. Metallurgical testwork was completed at Base Met Laboratories in Kamloops, B.C. from October 2024 through December 2024 on representative samples selected from recent

metallurgical drilling, including material from the previously uncharacterized high grade, shallower depth epithermal zone. Please see [May 15, 2024](#) press release for details on this new zone and hole ATXD26.

A total of three representative samples were selected by Libertas Metallurgy and ATEX geologists in August of this year:

1. **High Grade Early Porphyry (HGEP) Composite** selected from half core within the High-Grade Central Porphyry Trend.
2. **Early Porphyry (EP) Composite** selected from half core from within the porphyry surrounding the high-grade.
3. **ATXD26 HG Composite** selected from half core from the high-grade epithermal zone of mineralization located above the main porphyry deposit.

## Program Scope

The second metallurgical program focused on the following key elements:

1. Head characterization including chemical assays and quantitative mineralogy.
2. Comminution testwork for SAG milling (SMC tests) and ball milling (Bond Ball Work Index tests).
3. Comprehensive program of rougher and cleaner flotation tests culminating on successful locked cycle tests (LCTs) on each of the three composites.
4. Leaching of flotation tails for additional gold recoveries.

Composite head grades ranged from 0.45% to 1.00% for copper and 0.36 g/t to 0.44 g/t for gold and were representative of the geometallurgical domains tested. Locked cycle test results are aligned with the first metallurgical program results with copper recoveries ranging from 92% to 95% at high quality copper concentrate grades ranging from 31% to 33%. Gold recoveries to copper concentrate ranged from 56% to 64% with concentrates grading 8 g/t to 15 g/t. Potential for an additional increase in gold recoveries of 25% to 38% was demonstrated via cyanide leaching of the copper cleaner 1 tails and rougher tails.

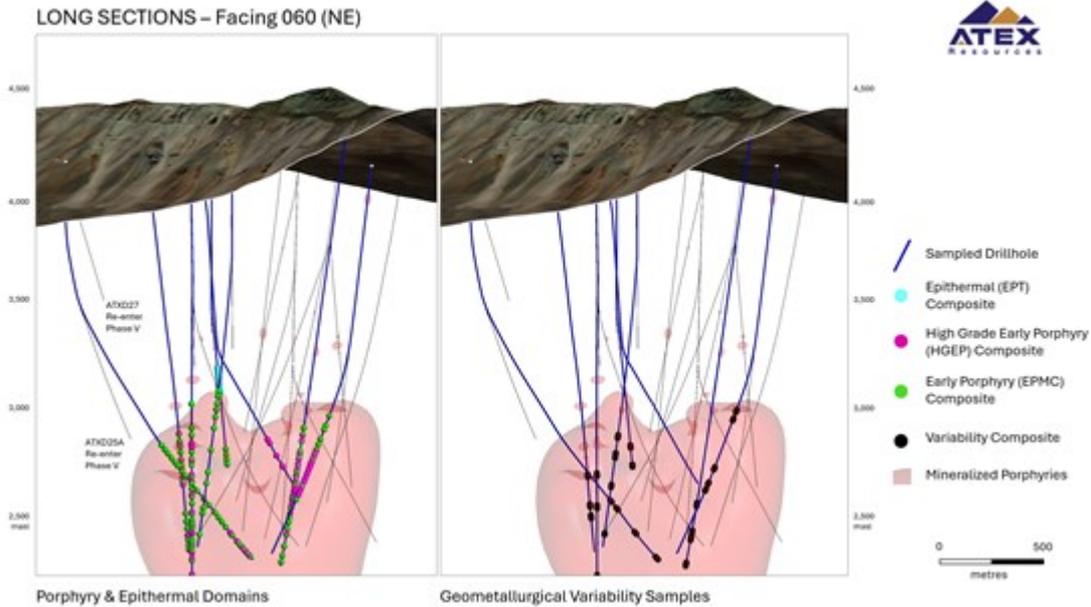
Additional comminution testwork confirmed that Valeriano material is amenable to SAG milling and that Bond Ball Work indices were of average to above average hardness. Coarsening of the primary grind target from 120 µm in Phase 1 to 165 to 200 µm in Phase 2 will result in significant energy savings over the life of mine, while having little to no impact on metal recovery. Geometallurgical (variability) testwork is ongoing, with QEMSCAN mineralogical analysis and flotation testwork on 25 discrete geometallurgy samples expected to be complete in early 2025.

## Sample Selection

The metallurgical samples were selected as follows:

- **Early Porphyry (EPMC) Composite:** ~500 kg with selected intervals originating from multiple holes, and a copper equivalent grade of greater than 0.70%.
- **High Grade Early Porphyry (HGEP) Composite:** ~300 kg with selected intervals originating from multiple holes and a copper equivalent grade of almost 1.00%.
- **Epithermal (EPT) Composite:** ~90 kg with intervals originating from hole ATXD26 and a targeted copper equivalent grade of ~1.50%.

The figure below summarizes the location of the selected domain composites and variability samples:



**Figure 1 - Porphyry, Epithermal Domain Composite & Geometallurgical Variability Sample Selections (Facing Northeast)**

To view an enhanced version of this graphic, please visit:

[https://images.newsfilecorp.com/files/6303/233259\\_3aa041ded4b8e8a0\\_001full.jpg](https://images.newsfilecorp.com/files/6303/233259_3aa041ded4b8e8a0_001full.jpg)

The majority of samples originated from Phase III and Phase IV drilling in 2023 and 2024 respectively. Intervals were selected from multiple holes and from various locations down hole to provide the best possible spatial representivity, with the exception being the epithermal composite where only one drill hole intersected this zone. In addition to the three domain composites, 25 discrete geometallurgical samples were selected from the lower portion of the porphyry. These geometallurgical variability samples represented continuous intervals of approximately 10 m to 20 m in length and ranged from approximately 20 kg to 40 kg each. The samples originated from multiple holes within the bottom 500 meters of the porphyry and covered a range of copper and gold grades. Figure 1 above summarizes the location of the selected domain composites and variability samples.

A total of 194 half core intervals were selected from across the three domains to create the three domain master composites. The samples are summarised in Table 1 below:

**Table 1 - Selected Composite Calculated Grades**

Composite	Cu (%)	Au (g/t)	Ag (g/t)	Mo (ppm)	Fe (%)	CuEq (%) <sup>1</sup>
High Grade Early Porphyry	0.67	0.36	2.3	41	3.03	0.94
Early Porphyry	0.45	0.39	1.6	20	2.88	0.73
Epithermal	1.00	0.44	2.3	405	3.73	1.48

1. CuEq calculated using recoveries assumed in 2023 MRE (90% Cu, 70% Au, 80% Ag and 60% Mo) (See Company news dated September 12, 2023) using the formula stated below:

a. Copper Equivalent (CuEq) is calculated using the formula  $CuEq \% = Cu \% + (6,481.488523 * Au \text{ g/t} / 10,000) + (94.6503085864 * Ag \text{ g/t} / 10,000) + (4.2328042328 * Mo \text{ g/t} / 10,000)$ .

## Flotation, Leaching and Comminution Testwork

A total of 22 rougher and cleaner batch flotation tests were conducted on 2 kg testwork charges from the three domain composites. The Phase I Valeriano process flowsheet was assessed on all composites and optimized as required:

- Initial, baseline primary grind to a P80 of 120 µm, which was subsequently coarsened to 165 µm for the epithermal composite and 200 µm for the porphyry composites. No negative impact to metals recovery was observed during grind vs. recovery sensitivity testwork.
- Copper rougher flotation with conventional copper and gold collectors.
- Small dosages of fuel oil collector added to the rougher and cleaner stages to promote molybdenum flotation.
- Regrinding of the copper rougher concentrates to 25 µm to 50 µm.
- Two stages of copper cleaner flotation to produce a concentrate grading +30% Cu.

Primary grind vs. recovery sensitivity testing on the three domain composites indicate that the primary grind can be coarsened up to 80% passing 200 µm for the high grade and early porphyry composites, and 165 µm for the epithermal composite. Based on preliminary mine scheduling, this could result in lower capital and operating costs for the Project. The epithermal composite is slightly softer than the porphyry composites and the finer primary grind size required for this material may be offset by the lower hardness indices.

## **Second Metallurgical Program Summary and Conclusions**

The second metallurgical program testwork continues to demonstrate that the process flowsheet being developed for Valeriano is robust. Metallurgical performance was excellent for all three composites tested and the previously untested epithermal zone appears to be responding well to the standard Valeriano metallurgical flowsheet.

- Robust copper and gold recovery projections to copper flotation concentrate of 92% to 95% and 56% to 64% respectively, in line with the first metallurgical program testwork results.
- Concentrate grades of greater than 31% Cu and higher than 8 g/t Au is marketable to global copper smelters.
- Full element characterization of the copper concentrates indicate that it is generally low in deleterious elements. Arsenic content in the copper flotation concentrates ranged from 0.09% As to 0.24% As.
- Potential for increasing gold recovery 25% to 38% via cyanide leaching of the flotation tails is an option that merits further investigation. Combined flotation and leaching gold recoveries could reach 90% to 97% if leaching of flotation tails is shown to be economically viable.
- Cu-Mo separation could produce a saleable molybdenum concentrate and there is significant molybdenum upside for the epithermal zone that warrants further investigation.
- Valeriano material is amenable to SAG and ball milling and is of average to above average hardness, in line with other copper porphyry deposits. Coarsening of the primary grind from 120 µm to 165-200 µm was achieved during the second metallurgical program and will have a positive impact on the project economics.
- Geometallurgical testwork is ongoing on 25 additional samples at Base Met Labs in addition to copper-molybdenum separation and dewatering testwork on products from flotation of a bulk composite.
- SAG mill amenability (SMC tests) and ball milling amenability (Bond Ball Work Index tests) were also completed on each composite. These suggest that Valeriano material is amenable to SAG mill grinding with Bond Ball Work Indices ranging from 12.7 kwh/t for the wall rock to 15 kwh/t - 16 kwh/t for the porphyry composites.

## **Exploration Update**

ATEX's Phase V exploration program is currently underway, with three rigs currently operational at site with the fourth being mobilized this week. Holes ATXD23A and ATXD16B are progressing well and on track for completion in late December/early January.

- Hole ATXD23A is being drilled to follow up on the overprinting high-grade breccia mineralization intersected above known porphyry units which was discovered in Phase IV drill hole ATXD26 (including 68.0 metres of 2.02% CuEq; 1.39% Cu, 0.60 g/t Au, 3.81 g/t Ag and 473 g/t Mo).

- Hole ATXD16B is being drilled to further define high-grade mineralisation hosted within porphyry units by targeting extensions to the southeast of Phase IV drill hole ATXD16A (112m of 1.42% CuEq; 1.01% Cu, 0.57 g/t Au, 2.06 g/t Ag and 46 g/t Mo; please see [February 22, 2024 press release](#) for details).
- Hole ATXD27, paused during the Phase IV program will be completed by the third drill rig. It is designed to test the northeastern extensions to mineralised porphyry and will also drill below ATXD26 and ATXD23A, potentially adding volume to high-grade breccias intersected in Phase IV hole ATXD26.
- The fourth drill rig will complete hole ATXD25A which was paused at the end of Phase IV at the contact between the wall rock and the porphyry.
- The Company is planning to have a fifth rig mobilized in early January.

## **Adelaide Capital Markets**

ATEX is also pleased to announce it has extended its agreement with Adelaide Capital Markets ("**Adelaide**") of Toronto, Ontario, by one year until November 30, 2025, at a rate of \$8,000 per month, and their engagement may continue on a month-to-month basis thereafter on the same terms as the agreement unless otherwise terminated by either party. Adelaide will continue to provide investor relations services to ATEX including advising on the Company's investor relations strategy, updating and creating corporate content, assisting with public reporting and filings, and hosting virtual webinars and shareholder engagement. Adelaide is independent of ATEX and is a full-service investor relations firm specializing in providing services to small and mid-cap companies throughout North America.

## **Qualified Person**

Dr. Owen Hatton, PhD, MAusIMM, registered with the Australasian Institute of Mining and Metallurgy (AusIMM), is the Qualified Person, as defined by Canadian Securities National Instrument 43-101 Standards for Disclosure for Mineral Projects ("NI 43-101"), for the Valeriano Copper-Gold Porphyry Project. Dr Hatton is Director of Exploration of ATEX and is therefore not independent of ATEX for the purposes of NI 43-101. He has reviewed and approved the disclosure of the scientific and technical information contained in this press release.

## **About ATEX**

ATEX is exploring the Valeriano Copper-Gold Project which is located within the emerging copper gold porphyry mineral belt linking the prolific El Indio High-Sulphidation Belt to the south with the Maricunga Gold Porphyry Belt to the north, located in the Atacama Region, Chile. This emerging belt, informally referred to as the Link Belt, hosts several copper gold porphyry deposits at various stages of development including, Filo del Sol (Filo Mining), Josemaria (Lundin Mining), Los Helados (NGEX Minerals/JX Nippon), La Fortuna (Teck Resources/Newmont) and El Encierro (Antofagasta/Barrick Gold). The Valeriano Project hosts a large copper gold porphyry mineral resource: 1.41 billion tonnes at 0.67% CuEq (0.50% Cu, 0.20 g/t Au, 0.96 g/t Ag and 63.80 g/t Mo), which includes a higher-grade core totaling 200 million tonnes at 0.84% CuEq (0.62% Cu, 0.29 g/t Au 1.25 g/t Ag and 55.7 g/t Mo), as reported by ATEX on September 12, 2023<sup>1</sup>.

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## **CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS:**

This news release contains forward-looking statements, including predictions, projections, and forecasts. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "planning", "expects" or "does not expect", "continues", "scheduled", "estimates", "forecasts", "intends", "potential", "anticipates", "does not anticipate", or describes a "goal", or variation of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, future events, conditions, uncertainties and other factors which may cause the actual results, performance or achievements to be materially different from any future results, prediction, projection, forecast, performance or achievements expressed or implied by the forward-looking statements.

Such forward-looking statements include, among others: future results of on-going or additional metallurgical testing and programs; the marketability of copper concentrate that may be produced at the Project; the impact of coarser grinding on recoveries; potential for production of a saleable molybdenum concentrate; the length and terms of the engagement of Adelaide; the success and robustness of the process flowsheet being developed for Valeriano; plans for the evaluation of exploration properties including the Project; the success of evaluation plans; the success of exploration activities at the Project, including those related to copper, gold and molybdenum; mine development prospects; potential for future metals production; changes in economic parameters and assumptions; all aspects related to the timing and extent of exploration activities including the Phase V exploration program contemplated in this press release; timing of receipt of exploration results; the interpretation and actual results of current exploration activities, including drilling and metallurgical programs, and mineralization; changes in project parameters as plans continue to be refined; the results of regulatory and permitting processes; future metals price; possible variations in grade or recovery rates; failure of equipment or processes to operate as anticipated; labour disputes and other risks of the mining industry; the results of economic and technical studies; delays in obtaining governmental and local approvals or financing or in the completion of exploration; timing of assay results; as well as those factors disclosed in ATEX's publicly filed documents.

Although ATEX has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

**Neither the TSX Venture Exchange nor its regulation services provider has reviewed or accepts responsibility for the adequacy or accuracy of the content of this news release.**

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<sup>1</sup> Please see NI 43-101 technical report titled "Independent Technical Report for the Valeriano Copper-Gold Project, Atacama Region, Chile" by Joled Nur, CCCRRM-Chile, and David Hopper, CGeol, with an effective date of September 1, 2023, filed at [www.sedarplus.ca](http://www.sedarplus.ca) on October 25, 2023, for additional details on the 2023 Mineral Resource Estimate for the Valeriano project.



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