UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2024
or
☐ **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to
Commission file number: 001-37515

Aqua Metals, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**47-1169572**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)

5370 Kietzke Lane, Suite 201.
Reno, Nevada 89511
(Address of principal executive offices)

(775) 446-4418
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act

Title of each class of stock:	Trading symbol	Name of each exchange on which registered:
Common Stock	AQMS	The Nasdaq Capital Market

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the past 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company (as defined in Rule 12b-2 of the Act):

Large accelerated filer	☐	Accelerated filer ☐
Non-accelerated filer	☒	Smaller reporting company ☒
		Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

State the aggregate market value of voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter: $40,948,468.

The number of shares of the registrant's common stock outstanding as of March 18, 2025 was 8,290,601.

DOCUMENTS INCORPORATED BY REFERENCE

None.

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CAUTIONARY NOTICE

This annual report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Those forward-looking statements include our expectations, beliefs, intentions and strategies regarding the future. Such forward-looking statements relate to, among other things,

- our ability to have our Aqua Refining solutions gain market acceptance;
- our ability to acquire addition working capital on reasonable terms, as needed and on a timely basis.
- our intentions, expectations and beliefs regarding anticipated growth, market penetration and trends in our business;
- the timing and success of our plan of commercialization;
- our ability to demonstrate the operation of our AquaRefining process on a commercial scale;
- our ability to successfully apply our AquaRefining technology to the recycling of lithium-ion batteries;
- the effects of market conditions on our stock price and operating results;
- our ability to maintain our competitive technological advantages against competitors in our industry;
- our ability to maintain, protect and enhance our intellectual property;
- the effects of increased competition in our market and our ability to compete effectively;
- costs associated with defending intellectual property infringement and other claims;
- our expectations concerning our relationships with suppliers, partners and other third parties; and
- our ability to comply with evolving legal standards and regulations, particularly concerning requirements for being a public company and environmental regulations;

These and other factors that may affect our financial results are discussed more fully in “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in this report. Market data used throughout this report is based on published third party reports or the good faith estimates of management, which estimates are presumably based upon their review of internal surveys, independent industry publications and other publicly available information. Although we believe that such sources are reliable, we do not guarantee the accuracy or completeness of this information, and we have not independently verified such information. We caution readers not to place undue reliance on any forward-looking statements. We do not undertake, and specifically disclaim any obligation, to update or revise such statements to reflect new circumstances or unanticipated events as they occur, and we urge readers to review and consider disclosures we make in this and other reports that discuss factors germane to our business. See in particular our reports on Forms 10-K, 10-Q, and 8-K subsequently filed from time to time with the Securities and Exchange Commission.

PART I

Item 1. Business

Background

We were formed as a Delaware corporation on June 20, 2014, for the purpose of engaging in the business of recycling metals through an innovative, proprietary and patent-pending process that we developed and named “AquaRefining.” In 2015, Aqua Metals developed a breakthrough metal recycling technology that utilizes a clean, closed-loop process that can produce high-purity metal. We believe this innovative approach can deliver raw materials back into the manufacturing supply chain while reducing emissions and toxic byproducts and creating a safer work environment. In particular, the modular AquaRefining systems have already demonstrated the ability to recover critical minerals from both lithium-ion and lead acid batteries and can reduce the cost and environmental impact of battery recycling.

Aqua Metals has a history of battery recycling, having first owned and operated a lead acid battery recycling facility between 2017 and 2019. This breakthrough technology was initially applied in the lead acid battery (LAB) recycling industry, building the first integrated recycling system for breaking LAB and recovering pure metal utilizing our innovative and patented smelterless AquaRefining technologies. In 2019, we operated our demonstration AquaRefinery at commercial quantity production levels and produced over 35,000 ‘AquaRefined’ ingots operating twenty-four hours a day, seven days a week for sustained periods of time.

In February 2021, we announced our entry into the lithium-ion battery (LiB) recycling market through a key provisional patent we filed that applies the same innovative AquaRefining approach. We believe our entry into lithium-ion battery recycling positions Aqua Metals to capitalize on the surging demand for critical minerals driven by the global energy transition, expected to create a $400 billion market by 2030. In August 2021, we announced we had established our Innovation Center in the Tahoe-Reno Industrial Center (TRIC) focused on applying our proven technology to LiB recycling research, development and prototyping.

During the first half of 2022, we announced our ability to recover copper, lithium, nickel, cobalt and manganese from lithium-ion battery ‘black mass’ at bench scale at the Company’s Innovation Center. During 2022, we built our fully-integrated pilot system, located within the Company’s Innovation Center, which is designed to enable Aqua Metals to be the first company in North America to recycle battery minerals from black mass, sell them in the U.S. and position the Company as the first sustainable LiB recycler in North America to align with the U.S. government’s goal of retaining strategic battery minerals within the domestic supply chain.

During 2022, we conducted environmental comparisons based on Argonne National Lab’s modeling of lithium battery supply chains – called EverBatt. The initial results indicate that AquaRefining is a cleaner and more sustainable approach to LiB recycling, producing far less CO2 waste streams than smelting or chemical-driven hydrometallurgical processes currently on the market. In December 2022, we completed equipment installation and began to operate our first-of-a-kind LiB recycling facility, utilizing renewable electricity as the reagent to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. In January of 2023, Aqua Metals recovered its first metals from recycling lithium batteries using the patent-pending Li AquaRefining process.

In February 2023, we acquired a five-acre parcel of land with an existing building to begin development of our Li AquaRefining recycling campus at TRIC. When fully developed, the facility we envision is designed to process lithium-ion battery material using our proprietary Li AquaRefining technology. Subject to our receipt of the required additional capital, we expect to complete development of phase one, including all equipment installation within 3-4 quarters of securing the additional capital and to complete the commissioning and scaling of this operation at the new campus within 2 quarters of completion of the development. The Company is planning for a phased development of the campus, beginning with the already commenced redevelopment of an existing building on-site into the first commercial-scale Li AquaRefinery.

In the first half of 2024, we made significant progress on the construction of the planned first phase of the commercial Li AquaRefinery. We continue to pursue the required funding for the completion of the phase one development of our five-acre recycling campus through various sources, including debt, project finance, joint venture and strategic investment options. At the end of 2024, we completed the first multi-week continuous 7 day x 24 hour operation campaign at our pilot facility, demonstrating the ability to deliver exceptional recovery rates and produce battery-grade critical minerals.

In February, 2025, the Company announced its expanded vision to more than double the output of lithium carbonate by deferring the plating of nickel and cobalt to metal form until the next phase. We believe this will allow for several potential improvements to the early years of scaling – reduced CAPEX by simplifying the product set to lithium carbonate and MHP (Mixed Hydroxide Precipitates), more volume of product due to the simplification, further de-risk with the simplified product set, more revenue and overall operating margins with a much improved payback on remaining capital to be financed. The Company continues to seek the funding to complete the phase 1 operation.

Effective November 5, 2024, we effected a one-for-20 reverse stock split of our issued and outstanding common shares. All share and share price information set forth in this report has been adjusted retrospectively to reflect this stock split.

Unless otherwise indicated, the terms “Aqua Metals,” “Company,” “we,” “us,” and “our” refer to Aqua Metals, Inc. and its wholly owned subsidiaries.

All references in this report to “ton” or “tonne” refer to a metric ton, which is equal to approximately 2,204.6 pounds.

Overview

Aqua Metals is seeking to reinvent metal recycling with its patented and patent-pending AquaRefining™ technologies. Aqua Metals is focused on developing cleaner and safer metals recycling through innovation. We believe Aqua Metals can expand the development of breakthrough technologies for sustainable metal recycling and deliver high-value critical minerals back into the manufacturing supply chain while reducing emissions and toxic byproducts and creating much safer work environments.

Aqua Metals has invested in breakthrough metals recycling methodologies that we believe are environmentally responsible, economically competitive, and will help retain critical strategic metals within the U.S. while enabling domestically produced, sustainably produced, recycled metals to enter the supply chain and lower sole reliance on unsafe and toxic mining operations. Since 2015, Aqua Metals has developed breakthrough metal recycling technologies that utilize a clean, closed-loop process that can produce ultra-high purity metals. AquaRefining is designed to deliver raw materials back into the manufacturing supply chain, and replaces the need for polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and minimal waste.

We believe Aqua Metals' regenerative electro-hydrometallurgical recycling method potentially offers a substantial improvement over traditional pyrometallurgical and hydrometallurgical recycling techniques, which produce much higher emissions, lower recovery rates, and significant landfill waste. We believe the AquaRefining process has the potential to vastly reduce the environmental impact of recycling lithium batteries as compared to other processes while providing a higher yield of high-purity metals essential for the burgeoning US battery manufacturing industry.

We are in the process of demonstrating that Li AquaRefining can create the highest quality and highest yields of recovered minerals from lithium-ion batteries, with lower waste streams and lower costs than alternatives. With the proven ability to recover valuable metals from lithium-ion batteries at our pilot facility in the TRIC, our goal is to demonstrate our ability to process commercial quantities of high-purity lithium hydroxide and/or carbonate, nickel, cobalt, manganese dioxide, and copper in pure forms that can be sold to the general metals and superalloy markets, and can be made into battery precursor compound materials with proven processes that are already used in the battery industry.

The Company is also exploring additional innovative applications of AquaRefining across metals recycling industries at our Innovation Center, including recycling emerging battery chemistries and opportunities to develop additional products for sale to customer specifications.

Our Markets

Aqua Metals’ AquaRefining process produces high purity metals and alloys that can be returned into the battery manufacturing supply chain or sold into metals markets for use across various advanced manufacturing industries. This combination of approaches and the broad applicability of the end products we aim to produce enables Aqua Metals to create low-emissions inputs for the battery supply chain or to help decarbonize other sectors that utilize these critical metals and superalloys – creating a more resilient and adaptable business model for the Company as a whole.

Metals Markets

Most of the minerals and metals that can be recovered in the recycling of batteries of various chemistries are also globally traded commodities. Lead, copper, cobalt, nickel, and other metals can be recovered and sold in pure metal form into these markets at the prevailing price or sold directly to a customer at a price set relative to the current market price.

For example, battery metals are globally traded metal commodities. Metals such as lead for LABs and nickel, cobalt, copper and lithium for LIBs are the essential components for the world’s rechargeable batteries. These metals are globally traded primarily on the London Metals Exchange (LME) and the Shanghai Metals Exchange (SHME) in China also trades these elements. In their pure forms, the other minerals that Aqua Metals intends to recover from spent batteries can be sold into these global markets. Unlike lead markets where recycled mineral content achieves up to 90% of new LAB batteries in a mature industry, lithium and related metals recycling currently achieves only 1-3% recycled mineral content of new LiB batteries, relying almost entirely on newly mined ore and refining to meet global demand.

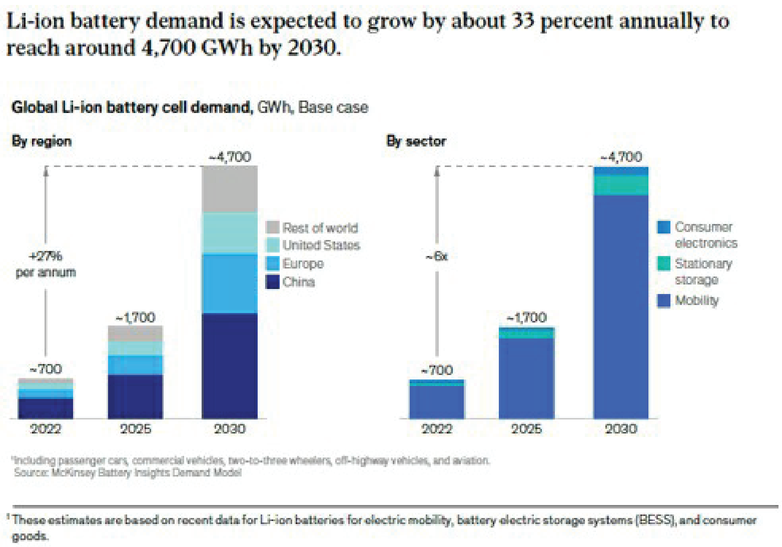
As noted above, although metals are traded as a commodity on the various global exchanges, the major sales are directly between producers/traders and users (whom are typically battery manufacturers). The LME daily price is used as the benchmark in forming the basis of physical trades, forward contracts, and hedge strategies for both primary and secondary metals, in metal form. Based on market and product knowledge with buyers of metals in the U.S. and global metals markets, different grades (termed alloys) of metal are traded at a premium to the base LME price. Metal alloys, which are typically designed specifically for the customer, are also sold at a premium above the base LME, whereas byproducts (generally lower purity, compounds, or scrap) are traded at a discount to the LME as they are based on the underlying metals content and its form.

The Lithium Battery Market

Global demand for Li-ion batteries is expected to soar over the next decade, with the number of GWh required increasing from about 700 GWh in 2022 to around 4.7 TWh by 2030 (Figure 1 below). Batteries for mobility applications, such as electric vehicles (EVs), will account for the vast bulk of demand in 2030—about 4,300 GWh; an unsurprising trend seeing that mobility is growing rapidly. This is largely driven by three major drivers:

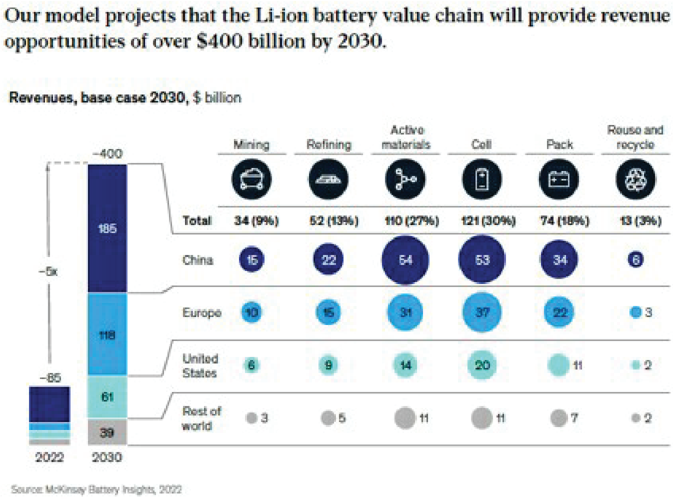
- A regulatory shift toward sustainability, which includes new net-zero targets and guidelines, including Europe's "Fit for 55" program, the US Inflation Reduction Act, the 2035 ban of internal combustion engine (ICE) vehicles in the EU and in the State of California in the U.S., and India's Faster Adoption and Manufacture of Hybrid and Electric Vehicles Scheme.
- Greater customer adoption rates and increased consumer demand for greener technologies (up to 90 percent of total passenger car sales will involve EVs in selected countries by 2030).
- Announcements by 13 of the top 15 OEMs to discontinue production of ICE vehicles and achieve new emission-reduction targets.

Figure 1: Growth of the Li-ion Battery Market Battery



Battery energy storage systems (BESS) are expected to have a CAGR of 30 percent, and the GWh required to power these applications in 2030 will be comparable to the GWh needed for all applications today. China could account for 45 percent of total Li-ion demand in 2025 and 40 percent in 2030—most battery-chain segments are already mature in that country. Nevertheless, growth is expected to be highest globally in the EU and the United States, driven by recent regulatory changes, as well as a general trend toward localization of supply chains. In total, at least 120 to 150 new battery factories will need to be built between now and 2030 globally to have sufficient capacity to meet predicted demand. In line with the surging demand for Li-ion batteries across industries, it is projected that revenues along the entire value chain will increase 5-fold, from about $85 billion in 2022 to over $400 billion in 2030 (Figure 2). Active materials and cell manufacturing may have the largest revenue pools. Mining is not the only option for sourcing battery materials since recycling is also an option. Although the recycling segment is expected to be relatively small in 2030, it is projected to grow more than three-fold in the following decade, when more batteries reach their end-of-life and greater quantities of manufacturing scrap material become available for recycling.

Figure 2: Li-ion Revenue Opportunities through 2030



Lithium Batteries

EV batteries are powered by a battery pack made up of individual cells. Each cell has 4 components: the cathode, anode, separator, and electrolyte. Lithium-ion batteries use different raw materials for each of the components. The most common material used for the anode is graphite. The most widely used metal for the cathode is metal oxides that are combinations of lithium, cobalt, nickel, manganese, and aluminum. The electrolyte is generally made using acidic salts and solvents such as sulfuric acid and there are also solid-state silicon-based alternatives under development and early deployments have begun. The separator is usually created using a porous, polyolefin material like polyethylene or polypropylene.

Lithium-ion battery recycling is the method of taking EV batteries and splitting it into its components, ultimately into the original raw materials (lithium, nickel, cobalt, etc.) that can be reused in new batteries. While making lithium-ion batteries for EVs is important to address climate change, the batteries themselves are harmful to the environment if left in landfills or burned. Currently, only a small fraction of lithium-ion batteries are recycled and that must get close to 100% both to avoid environmental issues and to recapture the critical minerals in those spent batteries to feed the massive demand growth curve. Battery recycling helps address this problem, but current pyro-based battery recycling technology (smelting) also creates harmful emissions, potentially creating new climate problems faster than they are being solved. There are alternative hydro-based technologies available and rely on older methodologies that are known to create significant waste streams, potentially with more waste than product recovered, which have their own negative environmental and economic impacts.

Black Mass

Lithium-ion batteries are comprised of valuable metals such as lithium, copper, manganese, cobalt, and nickel. Once a battery is retired, the batteries can be collected, fully discharged, then shredded and base metals are separated to prepare them for recycling. This shiny, metallic mixture is what is called ‘black mass’—and it contains all the valuable metals that make up battery anodes and cathodes, the most expensive parts of a battery and the companies that collect and process batteries into black mass are referred to as ‘shredders’. The typical black color is due to the high concentrations of graphite contained in the anodes of batteries, which has a very dark black color. Black mass makes up about 40-50% of the total weight of an EV battery. Materials like the binder, copper, electrolytes, plastics, aluminum, and steel have been physically separated out by shredders before being recycled.

There are two main processes to producing black mass:

1. Pyrometallurgy: some black mass producers will use high temperatures to burn off unwanted materials like plastics and remaining electrolyte. This can create hazardous emissions and waste that must be captured or mitigated, and result in less recovered material.

2. Hydrometallurgy: many producers use solution-based techniques—using water, chemicals and electricity to crush and separate the materials from a battery. This eliminates the need for polluting furnaces and energy intensive processing, creating a lower-carbon black mass.

Aqua Metals specifically partners with producers that use non-pyro processes in order to create black mass to meet their own objectives for creating low-carbon recycled materials. The exact composition of black mass can vary considerably based on a number of factors. To start, there are many different types of lithium-ion batteries and manufacturing scrap forms, which will revert back to a mix of different elements and different ratios, including lithium, nickel, iron, titanium, copper, cobalt, manganese, and others (their use of lithium is the commonality).

Each manufacturer also has their own specific 'recipe' for their cathodes, cell type/form factors, as well as module type and pack assembly for different applications (cell phones, laptops, electric vehicles, etc.). Currently, the most popular types of lithium-ion batteries in the world incorporate significant amounts of nickel, cobalt, lithium, and manganese—so black mass produced today will typically have varying concentrations of each.

AquaRefining Process

We developed AquaRefining to be a cleaner and modular alternative to smelting and chemical-based recycling methods. Our process has two key elements, both of which are integral to our issued patents and pending-patent applications. The first is our use of proprietary, non-toxic solvents that dissolves metal compounds. The second is a proprietary electrochemical process and our modular Aqualyzer cells that selectively target each critical element and converts the dissolved metal compounds into high purity metals and/or salts.

The AquaRefining process begins with the processing of crushed used batteries either in the form of paste (for LAB) or, black mass (for LIB). The active materials are first processed to remove sulfur and then dissolved in our solvent. Metals are plated from the solvent using our patented and patent-pending process allowing the solvent to be reused.

We have demonstrated at bench scale and subsequently in our pilot facility that our lithium battery AquaRefining process can generate cobalt, lithium hydroxide or carbonate, copper, nickel, and manganese dioxide from lithium-ion battery black mass. A significant benefit of our AquaRefining process is that it can produce higher yields of higher purity, and thus higher value product than that derived from primary smelters with product from secondary sources.

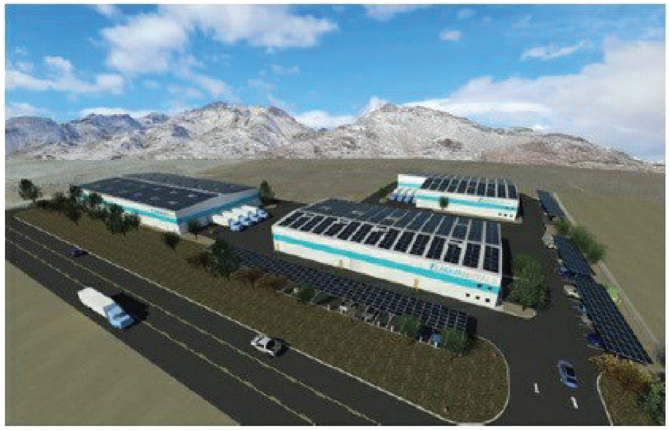
Another significant benefit of our process is that we designed our AquaRefining equipment to be manufactured on a purpose-built production line in standard sized Aqualyzers. This is not possible with the smelting process, as smelters need to be constructed on site. This gives us the ability to provide AquaRefining systems with varying capacities to meet the specific needs of potential customers and suppliers. We have also developed an integrated software and portal called PureMetrics that keeps track of production and key operating metrics.

Recycling is subject to a variety of domestic and international regulations related to hazardous materials, emissions, employee safety and other matters. While our operations will be subject to these regulations, we believe that one of our potential advantages will be our ability to conduct battery recycling operations with less regulatory cost and burden than smelting operators due to the nature of our process. One of our key initiatives is and will continue to be, to educate regulators and the public as to the environmental benefits of AquaRefining. We believe that we have the potential to develop a business model that offers the opportunity to conduct, in an environmentally friendly manner, an important recycling activity that historically has been conducted in an often highly polluting manner.

Project Site

Aqua Metals is in the process of building a new lithium-ion battery recycling facility to be located within Storey County, Nevada (the "Project"). The Project is located at 2955 & 2999 Waltham Way, McCarran, NV 89434 (the "Commercial Facility"). Aqua Metals operates a demonstration scale facility at 160 Denmark Drive, McCarran, NV 89434 (the "Innovation Center") which utilizes the equivalent equipment and technology as is expected to be constructed and operated in the Project.

Figure 3: Aqua Metals Site Rendering



Highlights include:

- Five-acre campus designed to ultimately process 7,000 MT of lithium-ion battery black mass annually
- Tahoe-Reno Industrial Center campus at the heart of Nevada's lithium battery supply chain
- Foreign Trade Zone designation
- Rendering of existing building and additional land available for future expansion

Our Business Model

Aqua Metals is engaged in the business of applying its commercialized clean, water-based recycling technology principles to develop the clean and cost-efficient recycling solutions for both lead and lithium-ion ("Li") batteries. Our recycling process is a patented hydrometallurgical and electrochemical technology that is an innovative, proprietary and patented process we developed and named AquaRefining. AquaRefining is a low-emissions, closed-loop recycling technology that replaces polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and with minimal waste. The "Aqualyzers" cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy.

We are applying our sustainable recycling technology principles with the goal of developing the cleanest and most cost-efficient recycling solution for lithium-ion batteries. We believe our process has the potential to produce higher quality products at a lower operating cost without the damaging effects of furnaces and greenhouse emissions. We expect to recover lithium hydroxide or lithium carbonate, copper, nickel, cobalt, and other compounds in a salable form to either be sold directly to lithium battery CAM manufactures or the commodities market. Aqua Metals estimates the total addressable market for lithium-ion battery recycling will grow to exceed lead battery recycling by the end of the decade. Unlike the mature lead recycling market, the deployed lithium-ion battery recycling infrastructure to serve market growth does not exist today.

Our business strategy focuses on developing and operating Li AquaRefining recycling facilities to meet the rising demand for critical metals used in lithium-ion batteries. This demand is driven by innovations in automobile batteries, the expansion of internet data centers, and alternative energy applications such as solar, wind, and grid-scale storage. Additionally, we aim to commercialize our AquaRefining process by licensing our technology to third parties and forming joint ventures and strategic partnerships with battery manufacturers and recyclers.

We are in the process of demonstrating that Li AquaRefining, which is fundamentally non-polluting, can create the highest quality and highest yields of recovered minerals from lithium-ion batteries with lower waste streams and lower costs than existing alternatives. Throughout 2023 and 2024, we have demonstrated at our pilot facility our ability to recover key valuable minerals in lithium-ion batteries, such as lithium hydroxide or lithium carbonate, copper, nickel, cobalt, and other compounds. Our goal is to process commercial quantities of nickel, cobalt, and copper in a pure metal form that can be sold to the general metals and superalloy markets and can be made into battery precursor compound materials with known processes already used in the mining industry. We have operated the first Li AquaRefining pilot plant in 2023 and in 2024. The location for the pilot demonstration facility is currently the Innovation Center with expansion to happen at our new 5-acre recycling campus to commercial quantities. Once fully completed, and based on our new expanded vision to more than double the output of lithium carbonate by deferring the plating of nickel and cobalt to metal form until the next phase, our first commercial facility is designed to process ~7,000 tonnes / year or more of battery materials, which would be enough material to build ~70,000 average EVs or ~300,000 average home energy storage systems. We are proceeding with a phased development approach, and commenced phase one of our campus.

Our focus for the lithium market includes operating our first-of-a-kind lithium battery recycling facility, utilizing electricity to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. We are also exploring partnership and/or joint venture agreements, particularly as our Li AquaRefining matures. We believe that Aqua Metals is in a position to become one of the few critical minerals recovery players for which our environmental and economic value proposition should generate both great commercial wins and potentially government grants to accelerate our expansion and progress.

The market for lithium-ion batteries is global in scale but local in nature and execution, with large differences in local regulation, custom and practice, and access to transportation and electricity costs. In some regions, it is highly regulated, and in others it is not. Consequently, we are evolving our business model to commercialize our technology optimally across multiple locations.

Competition

Our development of recycling technology for lithium-ion batteries is a unique approach to extracting the high-value metals compared to the array of other potential solutions under development. Currently, smelting is the only commercially proven process for recycling lithium-ion batteries. The smelting process utilizes multiple high emissions steps with low yields to produce materials that typically require further refining before being utilized to manufacture new batteries. Over the next decade and beyond, when the volume of used batteries becomes significant, smelting will likely not be a viable solution due to the negative environmental impact and likelihood of regulatory restrictions on emissions. The other technologies currently under development utilize a predominately hydrometallurgical approach that consumes significant amounts of chemicals to extract the metals resulting in high cost and excessive waste streams. Our approach is a hybrid of hydrometallurgical and electrometallurgical processes like the process we have commercialized for lead, we call it "Li AquaRefining." We believe that Li AquaRefining, as demonstrated through our lab-scale, bench-scale, and now pilot-scale operations, requires fewer chemicals, generates less waste, and produces higher-purity products at a lower cost compared to both smelting and standard hydrometallurgy.

The lithium-ion battery recycling market is significantly different from that of the lead recycling market in that it is a nascent industry. With no predominant technology to displace, our goal is to enable new and existing recyclers across the globe with Li AquaRefining as a best-in-class solution for meeting the supply chain demands of the lithium-ion battery industry as well as meeting the environmental needs of the planet and the corporations seeking to achieve net zero emissions.

The competitive advantages of the Aqua Metals project include:

- Replaces furnaces and heavy chemical use with 100% electricity-powered and closed-loop recycling, creating fundamentally non polluting, cost-efficient solution that generates minimal waste
- AquaRefining recovers all valuable materials, including Lithium Hydroxide, Lithium Carbonate, and Manganese Dioxide, which are not recovered by competing methods
- Recovers the high-value metals lost in smelting (like lithium and manganese), and produces high purity products
- Only Li-ion recycling method with pathway to net-zero operations
- Strong IP protection: 45 global patents; 42 patents pending for recycling various battery chemistries, including lithium ion and lead acid
- Only electro-hydrometallurgy recycler in North America
- Safer work environment, less hazardous materials, eliminates constant trainloads of chemicals
- Massive and growing global addressable market
- Greenfield opportunity for partnerships and strategic alliances

Intellectual Property Rights

We regard the protection of our technologies and intellectual property rights as an important element of our business operations and crucial to our success. We endeavor to generate and protect our intellectual property assets through a series of patents, trademarks, internal and external policy and procedures and contractual provisions.

Patent Portfolio

Currently, we have secured 3 US patents, 38 international patents, and 4 allowances (international) for recycling various battery chemistries, including lithium ion and lead acid batteries. In addition to the US patents, we have international patents/allowances in the African Regional Intellectual Property Organization, African Intellectual Property Organization, Australia, Brazil, Canada, Chile, China, the Eurasian Patent Organization, European Union, Honduras, India, Indonesia, Japan, Malaysia, Mexico, Peru, South Korea, South Africa, Ukraine, and Vietnam. We also have 42 US and foreign patent applications pending with patent applications pending in 20 additional non-US jurisdictions, across five distinct patent applications relating to certain elements of the technology underlying our AquaRefining process and related apparatus and chemical formulations. The claims of the granted patents substantially address the same subject matter and are drawn to various aspects of processing lead or lithium materials using an aqua refining process. Differences in the claim number and scope are due to local rules and practice as well as the target metal.

We intend to continue to prepare and file domestic and foreign patent applications covering expanding aspects and applications of our technology, as circumstances warrant.

There can be no assurance that any patents will issue from any of our current or any future applications. Also, any patents that may issue may not survive a legal challenge to their scope, validity, or enforceability, or provide significant protection for us. Competitors may work around our patents, so they are not infringing. Our patent portfolio and our existing policy and procedures safeguarding our trade secrets nonetheless may face challenges so that our competitors can copy our AquaRefining process.

Trademark Portfolio

We have filed for trademark registration in the US and foreign countries for the following trademarks:

- AQUA METALS (14 foreign countries)
- AQUAREFINING (10 foreign countries)
- AQMS (US only)
- AQUAREFINERY (9 foreign countries)

Trade Secrets and Contract Protection

We have developed our internal policy and procedures in safeguarding our trade secrets and proprietary information. Our procedures generally require our employees, consultants, and advisors to enter into confidentiality agreements. These agreements provide that all confidential information developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except under specific circumstances. In the case of our employees, the agreements provide that all of the technology that is conceived by the individual during the course of employment is our exclusive property. The development of our technology and many of our processes are dependent upon the knowledge, experience, and skills of key scientific and technical personnel.

Government Regulation

Our operations and the operations of our licensees in the United States will be subject to the federal, state, and local environmental, health and safety laws applicable to the reclamation of LABs and lithium based batteries. While the reclamation process itself is generally not subject to federal permitting requirements, depending on how any particular operation is structured, our facilities and the facilities of our licensees may have to obtain environmental permits or approvals from federal, state or local regulators to operate, including permits or regulatory approvals related to air emissions, water discharges, waste management, and the storage of batteries on-site should that become necessary. We may face opposition from local residents or public interest groups to the installation and operation of our or our licensee's facilities. Failure to secure (or significant delays in securing) the necessary approvals could prevent us from pursuing some of our planned operations and adversely affect our business, financial results, and growth prospects.

In addition to permitting requirements, our operations and the operations of our licensees are subject to environmental health, safety and transportation laws and regulations that govern the management of and exposure to hazardous materials such as the lead, acids, and other metals involved in reclamation. These include hazard communication and other occupational safety requirements for employees, which may mandate industrial hygiene monitoring of employees for potential exposure to lead. Failure to comply with these requirements could subject our business to significant penalties (civil or criminal) and other sanctions that could adversely affect our business. Changes to these regulatory requirements in the future could also increase our costs, require changes in or cessation of certain activities, and adversely affect the business.

The nature of our operations and the operations of our licensees involves risks, including the potential for exposure to hazardous materials such as lead, that could result in personal injury and property damage claims from third parties, including employees and neighbors, which claims could result in significant costs or other environmental liability. Our operations and the operations of our licensees also pose a risk of releases of hazardous substances, such as lead, acids, and other metals related to lithium batteries into the environment, which can result in liabilities for the removal or remediation of such hazardous substances from the properties at which they have been released, liabilities which can be imposed regardless of fault, and our business could be held liable for the entire cost of cleanup even if we were only partially responsible. Like any manufacturer, we and our licensees are also subject to the possibility that we may receive notices of potential liability in connection with materials that were sent to third-party recycling, treatment, and/or disposal facilities under the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (“CERCLA”), and comparable state statutes, which impose liability for investigation and remediation of contamination without regard to fault or the legality of the conduct that contributed to the contamination, and for damages to natural resources. Liability under CERCLA is retroactive, and, under certain circumstances, liability for the entire cost of a cleanup can be imposed on any responsible party.

As our business expands outside of the United States, our licensed operations will be subject to the environmental, health and safety laws of the countries where we do business, including permitting and compliance requirements that address the similar risks as do the laws in the United States, as well as international legal requirements such as those applicable to the transportation of hazardous materials. Depending on the country or region, these laws could be as stringent as those in the US, or they could be less stringent or not as strictly enforced. In some countries in which we are interested in expanding our business, such as South America, Taiwan and China, the relevant environmental regulatory and enforcement frameworks are in flux and subject to change. Therefore, while compliance with these requirements will cause our business to incur costs, and failure to comply with these requirements could adversely affect our business, it is difficult to evaluate such potential costs or adverse impacts until such time as we decide to initiate operations in particular countries outside the United States.

Employees

As of the date of this report, we employ 11 people on a full-time basis. None of our employees are represented by a labor union.

Financial and Segment Information

We operate our business as a single segment, as defined by generally accepted accounting principles. Our financial information is included in the consolidated financial statements and the related notes.

Available Information

Our website is located at www.aquametals.com and our investor relations website is located at https://ir.aquametals.com/. Copies of our Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Reports on Form 8-K, and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are available, free of charge, on our investor relations website as soon as reasonably practicable after we file such material electronically with or furnish it to the Securities and Exchange Commission, or the SEC. The SEC also maintains a website that contains our SEC filings. The address of the site is *www.sec.gov*. The contents of our website are not intended to be incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. Before purchasing our common stock, you should read and consider carefully the following risk factors as well as all other information contained in this report, including our consolidated financial statements and the related notes. Each of these risk factors, either alone or taken together, could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock. There may be additional risks that we do not presently know of or that we currently believe are immaterial, which could also impair our business and financial position. If any of the events described below were to occur, our financial condition, our ability to access capital resources, our results of operations and/or our future growth prospects could be materially and adversely affected and the market price of our common stock could decline. As a result, you could lose some or all of any investment you may make in our common stock.

Risks Relating to Our Business and Operations

We have a limited operating history and limited revenue producing operations and are currently focusing on developing our lithium battery recycling. Therefore, it is difficult for potential investors to evaluate our business. We formed our corporation in June 2014. From inception through December 31, 2024, we generated a total of $11.7 million of revenue, all of which was derived primarily from the sale of lead compounds and plastics and, to a lesser extent, the sale of lead bullion and AquaRefined lead, and all but approximately $310,000 of which was derived prior to January 1, 2020 at our former LAB recycling facility. In the last three years, the business has been focused on completing the research and development of the application of our AquaRefining technology to the recycling of lithium-ion batteries and operating a lithium-ion recycling pilot plant. Based upon our success to date in recovering high value metals from lithium-ion batteries using our AquaRefining technology, we have commenced the development of a five-acre recycling campus designed to process up to 7,000 tonnes of lithium-ion battery material annually from our first phase. While we intend to continue to pursue our licensing business model, the development of our lithium-ion battery recycling facility represents a significant focus in our business strategy and course of operations. As of the date of this report, we estimate that we will begin to realize revenues from lithium-ion battery recycling with in three to four quarters after receiving funding, however we are unable to estimate when we expect to commence any meaningful commercial or revenue producing operations from either our licensing model or our lithium-ion battery recycling facility. Our limited operating history makes it difficult for potential investors to evaluate our technology or prospective operations and we are, for all practical purposes, an early-stage company subject to all the risks inherent in the initial organization, financing, expenditures, complications, and delays in a new business, including, without limitation:

- our ability to successfully apply, and realize the expected benefits of applying, our AquaRefining technology to the plating of high value metals found in lithium-ion batteries, including cobalt, and nickel;
- the timing and success of our plan of commercialization and the fact that we have not entered into a commercial license for our AquaRefining technology and only have recently commenced the build out of our lithium-ion recycling facility;
- our ability to successfully develop our proposed lithium-ion recycling facility;
- our ability to demonstrate that our AquaRefining technology can recycle either LABs or lithium-ion batteries on a commercial scale; and
- our ability to license our AquaRefining process and sell our AquaRefining equipment to recyclers of LABs and lithium-ion batteries.

Investors should evaluate an investment in us in light of the uncertainties encountered by developing companies in a competitive environment. There can be no assurance that our efforts will be successful or that we will ultimately be able to attain profitability.

We will need additional financing to execute our business plan and fund operations, which additional financing may not be available on reasonable terms or at all. As of December 31, 2024, we had total cash of $4.0 million and working capital of $(3.9) million. As of the date of this report, we believe that we will require additional capital in order to fund our current level of ongoing costs and our proposed business plan over the next 12 months as we move forward with our business strategy. We intend to acquire the necessary capital though debt financing or through the sale of equity. Funding that includes the sale of our equity may be dilutive. If such funding is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations, in which case you may lose your entire investment.

The report of our independent registered public accounting firm for the year ended December 31, 2024 states that there is substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued.

As of the date of this report, we have in excess of $4.0 million of secured indebtedness, the majority of which is held by related parties and all of which becomes due within the next nine months. In February 2023, we entered into a $3 million secured debt facility with Summit Investment Services, LLC, an entity controlled by Eric Gangloff, who subsequently became a member of our board of directors, and in December 2024 we conducted the private placement of $1.5 million of secured promissory notes with eight accredited investors, including certain of our executive officers and directors who purchased an aggregate of $1,200,000 of the private placement notes. The indebtedness under the Summit debt facility and the private placement notes are secured by all of our assets, with a few exceptions. All principal and interest under the Summit debt facility is due and payable on April 27, 2025 and all principal and interest under the private placement notes are due and payable on December 31, 2025. If we are unable to repay or refinance the secured debt in a timely manner, the debt holders can exercise their rights under their security agreements collateralizing their debt and foreclose on our assets. The fact that a majority of the debt is held by our officers and directors raises issues concerning potential conflicts of interest. There can be no assurance that we will be able to repay or refinance the secured debt in a timely manner.

We recently commenced the development of a lithium-ion recycling facility, however we are in the early stages of developing the facility and there can be no assurance that we will be able to successfully develop the facility or, if we do, realize the expected benefits of the facility. In January 2023, we announced our plans to conduct the phased development of a five-acre recycling campus in the Tahoe-Reno Industrial Center, or TRIC, in McCarran, Nevada. The first phase of the facility is designed, when fully developed, to process up to 7,000 tonnes of lithium-ion battery material each year using our proprietary AquaRefining technology. On February 1, 2023, we closed on the acquisition financing and purchased the five-acre site, plus the existing 21,000 square foot building, and as noted elsewhere, in third quarter of 2023 we raised a net of $22.9 million from the sale of our common stock. In the second quarter of 2024 we raised a net of $7.3 million from the sale of our common stock. In the first half of 2024 we began the Phase One build-out of the facility. However, we will need additional financing to complete the build-out of Phase One, which we intend to pursue through conventional non-dilutive loans, potential government backed debt offerings, government grants or through the sale of our common stock via our current at-the-market offering. The Company is planning for a phased development of the campus, beginning with the already commenced redevelopment of an existing building on-site into the first commercial-scale Li AquaRefinery. Subject to our receipt of development financing on a timely basis, we expect to complete development of Phase One, including all equipment installation, within three quarters of receiving funding and to commence operations shortly thereafter. However, there can be no assurance we will be able to do so.

Our business is dependent upon our successful implementation of innovative technologies and processes and there can be no assurance that we will be able to implement such technologies and processes in a manner that supports the successful commercial roll-out of our business model. While much of the technology and processes involved in battery recycling operations are widely used and proven, our AquaRefining process is largely innovative and, to date, has been demonstrated on a modest scale of operations. While we have shown that our proprietary technology can produce AquaRefined metals from batteries on a small scale, we have not processed recycled batteries on a commercial scale. We recently commenced the development of a five-acre recycling campus designed to process lithium-ion batteries, however there can be no assurance that we will be able to complete the development of the recycling facility or, if we are able to do so, that we will be able to successfully process lithium-ion batteries on a commercial scale.

Our business model is new and has not been proven by us or anyone else. We are engaged in the business of producing recycled metals from LABs and high value metals from lithium-ion batteries through an innovative, and proven on a modest scale, technology. While the production of recycled batteries is an established business, to date virtually all recycled metals have been produced by way of traditional smelting processes. To our knowledge, no one has successfully produced recycled batteries in commercial quantities other than by way of smelting. In addition, neither we nor anyone else has ever successfully built a production line that commercially recycles batteries without smelting. Further, there can be no assurance that either we will be able to produce AquaRefined metals from batteries in commercial quantities at a cost of production that will provide us with an adequate profit margin. The uniqueness of our AquaRefining process presents potential risks associated with the development of a business model that is untried and unproven.

We have performed the research and development of the application of our AquaRefining technology to the recycling and recovery of lithium-ion batteries, however there can be no assurance that our efforts will be successful. In September 2021, we announced the establishment of our Innovation Center, in McCarran, Nevada, focused on applying our AquaRefining technology to lithium-ion battery recycling research and development and prototype system activities. In 2021, we filed a provisional patent for recovering high-value metals from recycled lithium-ion batteries to complement the patents for AquaRefining. At the end of 2022 and throughout 2023 and 2024, we successfully recovered all valuable materials from spent lithium batteries at production scale using our AquaRefining technology: lithium hydroxide, copper, nickel, cobalt, and manganese dioxide. We also operated our pilot plant throughout 2024. We are continuing our efforts to improve our Li AquaRefining process; however, there can be no assurance that our efforts will be successful or that we will be able to conduct the recycling and recovery of the high value metals from lithium-ion batteries on a commercial scale.

Our business strategy includes licensing arrangements and entering into joint ventures and strategic alliances, however as of the date of this report we have no such agreements in place and there can be no assurance we will be able to do so. Failure to successfully integrate such licensing arrangements, joint ventures, or strategic alliances into our operations could adversely affect our business. We propose, as one of our business strategies, to commercially exploit our AquaRefining process by licensing our technology to third parties and entering into joint ventures and strategic relationships with parties involved in the manufacture and recycling of batteries. We are also currently seeking to negotiate agreements with others. However, there can be no assurance we will be able to conclude a licensing agreement with any partners, or that we will be able to do so on terms that benefit us. Our ability to enter into licensing, joint ventures and strategic relationships with third parties will depend on our ability to demonstrate the technological and commercial advantages of our AquaRefining process, of which there can be no assurance. Also, even if we are able to enter into licensing, joint venture or strategic alliance agreements, there can be no assurance that we will be able to obtain the expected benefits of any such arrangements. In addition, licensing programs, joint ventures and strategic alliances may involve significant other risks and uncertainties, insufficient revenue generation to offset liabilities assumed and expenses associated with the transaction, potential additional challenges in protecting our intellectual property, and unidentified issues not discovered in our due diligence process, such as product quality, technology issues and legal contingencies. In addition, we may be unable to effectively integrate any such programs and ventures into our operations. Our operating results could be adversely affected by any problems arising during or from any licenses, joint ventures or strategic alliances.

Even if our licensees are successful in recycling batteries using our processes, there can be no assurance that the AquaRefined recycled metals will meet the certification and purity requirements of the potential customers. A key component of our business plan is the production of recycled metals through our AquaRefining process. Our customers will require that our AquaRefined metals meet certain minimum purity standards and, in all likelihood, require independent assays to confirm the metal's purity. As of the date of this report, we have produced limited quantities of AquaRefined metals. We have not produced AquaRefined metals in significant commercial quantities and there can be no assurance that we will be able to do so or, that such metals will meet the required purity standards of our customers. Further, while we have recently commenced the application of our AquaRefining process towards the recovery of high value metals found in lithium-ion batteries, such as cobalt, nickel, lithium hydroxide, lithium carbonate, copper, and manganese dioxide, we have only recently begun the development of recycling of lithium-ion batteries, and there can be no assurance that our efforts will be successful or that we will be able to conduct the recycling and recovery of the high value metals from lithium-ion batteries on a commercial scale.

While we have been successful in producing AquaRefined metals in small volumes, there can be no assurance that either we or our licensees will be able to replicate the process, along with all of the expected economic advantages, on a large commercial scale either for us or our prospective licensees. While we believe that our development, testing and limited production to date of AquaRefined metals has validated the concept of our AquaRefining process, the limited nature of our operations to date are not sufficient to confirm the economic returns on our production of recycled metals. Further, we have only recently commenced commercial operations in the area of recycling of lithium-ion batteries. There can be no assurance that either us or our licensees will be able to produce AquaRefined metals from batteries in commercial quantities at a cost of production that will provide us and our proposed licensees with an adequate profit margin.

Our intellectual property rights may not be adequate to protect our business. As of the date of this report, we have 3 issued US patents, 38 international patents, and 4 international allowances related to our AquaRefining process.

We also have further patent applications pending in the United States and numerous corresponding patent applications pending in 20 additional jurisdictions relating to certain elements of the technology underlying our AquaRefining process and related apparatus and chemical formulations. However, no assurances can be given that any patent issued, or any patents issued on our current and any future patent applications, will be sufficiently broad to adequately protect our technology. In addition, we cannot assure you that any patents issued now or in the future will not be challenged, invalidated, or circumvented.

Even patents issued to us may not stop a competitor from illegally using our patented processes and materials. In such event, we would incur substantial costs and expenses, including lost time of management in addressing and litigating, if necessary, such matters. Additionally, we rely upon a combination of trade secret laws and nondisclosure agreements with third parties and employees having access to confidential information or receiving unpatented proprietary know-how, trade secrets and technology and employees sign severance agreements upon termination due to a reduction in force to protect our proprietary rights and technology. These laws and agreements provide only limited protection. We can give no assurance that these measures will adequately protect us from misappropriation of proprietary information.

Our processes may infringe on the intellectual property rights of others, which could lead to costly disputes or disruptions. The applied science industry is characterized by frequent allegations of intellectual property infringement. Though we do not expect to be subject to any of these allegations, any allegation of infringement could be time consuming and expensive to defend or resolve, result in substantial diversion of management resources, cause suspension of operations or force us to enter into royalty, license, or other agreements rather than dispute the merits of such allegation. If patent holders or other holders of intellectual property initiate legal proceedings, we may be forced into protracted and costly litigation. We may not be successful in defending such litigation and may not be able to procure any required royalty or license agreements on acceptable terms or at all.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs. Our internal computer systems and those of our current and any future customers, vendors, licensees, collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our research and development and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our recycling technologies could be delayed.

We could be subject to risks caused by misappropriation, misuse, leakage, falsification or intentional or accidental release or loss of information maintained in the information systems and networks of our company and our customers, vendors, licensees, collaborators and other contractors or consultants, including personal information of our employees and others, and company and third-party confidential data. In addition, outside parties may attempt to penetrate our systems or those of our customers, vendors, licensees, collaborators and other contractors or consultants or fraudulently induce our personnel or the personnel of third parties to disclose sensitive information in order to gain access to our data and/or systems. We may experience threats to our data and systems, including malicious codes and viruses, phishing and other cyberattack. The number and complexity of these threats continue to increase over time. If a material breach of, or accidental or intentional loss of data from, our information technology systems or those of our customers, vendors, licensees, collaborators and other contractors or consultants occurs, the market perception of the effectiveness of our security measures could be harmed and our reputation and credibility could be damaged. We could be required to expend significant amounts of money and other resources to repair or replace information systems or networks. In addition, we could be subject to regulatory actions and/or claims made by individuals and groups in private litigation involving privacy issues related to data collection and use practices and other data privacy laws and regulations, including claims for misuse or inappropriate disclosure of data, as well as unfair or deceptive practices.

Although we develop and maintain systems and controls designed to prevent these events from occurring, and we have a process to identify and mitigate threats, the development and maintenance of these systems, controls and processes is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated. Moreover, despite our efforts, the possibility of these events occurring cannot be eliminated entirely. As we outsource more of our information systems to vendors, engage in more electronic transactions with third parties, and rely more on cloud-based information systems, the related security risks will increase and we will need to expend additional resources to protect our technology and information systems. In addition, there can be no assurance that our internal information technology systems or those of our customers, vendors, licensees, collaborators and other contractors or consultants will be sufficient to protect us against breakdowns, service disruption, data deterioration or loss in the event of a system malfunction, or prevent data from being stolen or corrupted in the event of a cyberattack, security breach, industrial espionage attacks or insider threat attacks which could result in financial, legal, business or reputational harm.

Risks Relating to Geopolitical, Macroeconomic and Industry Factors

Unfavorable geopolitical and macroeconomic developments could adversely affect our business, financial condition or results of operations. Our business could be adversely affected by conditions in the U.S. and global economies. Global economic uncertainty, inflation, changes in interest rates, supply chain disruptions, and fluctuations in foreign exchange rates can adversely affect our operations, profitability, and demand for our products and services.

Additionally, geopolitical tensions, trade restrictions, tariffs, and regulatory changes in key markets where we operate could impact our ability to source materials, manufacture products, or expand into new markets. Armed conflicts, economic sanctions, and political instability in various regions may disrupt our supply chains, increase costs, and limit growth opportunities. Furthermore, shifts in industry trends, technological advancements, and competitive pressures could require us to adapt our business model or invest significant resources to remain competitive. If we are unable to effectively manage these external risks, our financial performance and strategic objectives could be materially affected.

Any of the foregoing could harm our business. Any resulting financial impact cannot be reasonably estimated at this time but may materially affect our business and financial condition. The extent to which the foregoing impacts our results will depend on future developments, which are highly uncertain and cannot be predicted.

Our business may be negatively affected by labor issues and higher labor costs. Our ability to maintain our workforce depends on our ability to attract and retain new and existing employees. As of the date of this report, none of our employees are covered by collective bargaining agreements and we consider our labor relations to be acceptable. However, we could experience workforce dissatisfaction which could trigger bargaining issues, employment discrimination liability issues as well as wage and benefit consequences, especially during critical operation periods. We could also experience a work stoppage or other disputes which could disrupt our operations and could harm our operating results. In addition, legislation or changes in regulations could result in labor shortages and higher labor costs. There can be no assurance that we may not experience labor issues that negatively impact our operations or results of operations.

Global economic conditions could negatively affect our prospects for growth and operating results. Our prospects for growth and operating results will be directly affected by the general global economic conditions of the industries in which our suppliers, partners and customer groups operate. We believe that the market price of battery metal is relatively volatile and reacts to general global economic conditions. Our business will be highly dependent on the economic and market conditions in each of the geographic areas in which we operate. These conditions affect our business by reducing the demand for recyclable batteries and decreasing the price of battery metals in times of economic downturn and increasing the price of used batteries in times of increasing demand of recyclable batteries. There can be no assurance that global economic conditions will not negatively impact our liquidity, growth prospects and results of operations.

We are subject to the risks of conducting business outside the United States. A part of our strategy involves our pursuit of growth opportunities in certain international market locations. We intend to pursue licensing or joint venture arrangements with local partners who will be primarily responsible for the day-to-day operations. Any expansion outside of the U.S. will require significant management attention and financial resources to successfully develop and operate any such facilities, including the sales, supply and support channels, and we cannot assure you that we will be successful or that our expenditures in this effort will not exceed the amount of any resulting revenues. Our international operations expose us to risks and challenges that we would otherwise not face if we conducted our business only in the United States, such as:

- increased cost of enforcing our intellectual property rights;
- diminished ability to protect our intellectual property rights;
- heightened price sensitivities from customers in emerging markets;
- our ability to establish or contract for local manufacturing, support and service functions;
- localization of our battery metals and components, including translation into foreign languages and the associated expenses;
- compliance with multiple, conflicting and changing governmental laws and regulations;
- compliance with the Federal Corrupt Practices Act and other anti-corruption laws;
- foreign currency fluctuations;
- laws favoring local competitors;
- weaker legal protections of contract terms, enforcement on collection of receivables and intellectual property rights and mechanisms for enforcing those rights;
- market disruptions created by public health crises in regions outside the United States;
- difficulties in staffing and managing foreign operations, including challenges presented by relationships with workers' councils and labor unions;
- issues related to differences in cultures and practices; and
- changing regional economic, political and regulatory conditions.

Risks Relating to Government Law and Environmental Regulations

U.S. government regulation and environmental, health and safety concerns may adversely affect our business. Our operations and the operations of our licensees in the United States will be subject to the federal, state and local environmental, health and safety laws applicable to the reclamation of batteries including the Occupational Safety and Health Act ("OSHA") of 1970 and comparable state statutes. Our facilities and the facilities of our licensees will have to obtain environmental permits or approvals to expand, including those associated with air emissions, water discharges, and waste management and storage. We and our licensees may face opposition from local residents or public interest groups to the installation and operation of our respective facilities. In addition to permitting requirements, our operations and the operations of our licensees are subject to environmental health, safety and transportation laws and regulations that govern the management of and exposure to hazardous materials such as the acids involved in battery reclamation. These include hazard communication and other occupational safety requirements for employees, which may mandate industrial hygiene monitoring of employees for potential exposure.

We and our licensees are also subject to inspection from time to time by various federal, state and local environmental, health and safety regulatory agencies and, as a result of these inspections, we and our licensees may be cited for certain items of non-compliance. Failure to comply with the requirements of federal, state and local environmental, health and safety laws could subject our business and the businesses of our licensees to significant penalties (civil or criminal) and other sanctions that could adversely affect our business. In addition, in the event we are unable to operate and expand our AquaRefining process and operations as safe and environmentally responsible, we and our licensees may face opposition from local governments, residents or public interest groups to the installation and operation of our facilities.

The development of new AquaRefining technology by us or our partners or licensees, and the dissemination of our AquaRefining process will depend on our ability to acquire necessary permits and approvals, of which there can be no assurance. As noted above, our AquaRefining processes will have to obtain environmental permits or approvals to operate, including those associated with air emissions, water discharges, and waste management and storage. In addition, we expect that any use of AquaRefining operations at our partner's facilities will require additional permitting and approvals. Failure to secure (or significant delays in securing) the necessary permits and approvals could prevent us and our partners and licensees from pursuing additional AquaRefining expansion, and otherwise adversely affect our business, financial results and growth prospects. Further, the loss of any necessary permit or approval could result in the closure of an AquaRefining facility and the loss of our investment associated with such facility.

Our business involves the handling of hazardous materials and we may become subject to significant fines and other liabilities in the event we mishandle those materials. The nature of our operations involves risks, including the potential for exposure to hazardous materials such as lead, lithium hydroxide, and lithium carbonate that could result in personal injury and property damage claims from third parties, including employees and neighbors, which claims could result in significant costs or other environmental liability. Our operations also pose a risk of releases of hazardous substances, such as lead, lithium hydroxide, lithium carbonate or acids, into the environment, which can result in liabilities for the removal or remediation of such hazardous substances from the properties at which they have been released, liabilities which can be imposed regardless of fault, and our business could be held liable for the entire cost of cleanup even if we were only partially responsible. We are also subject to the possibility that we may receive notices of potential liability in connection with materials that were sent to third-party recycling, treatment, and/or disposal facilities under the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, or CERCLA, and comparable state statutes, which impose liability for investigation and remediation of contamination without regard to fault or the legality of the conduct that contributed to the contamination, and for damages to natural resources. Liability under CERCLA is retroactive, and, under certain circumstances, liability for the entire cost of a cleanup can be imposed on any responsible party. Any such liability could result in judgments or settlements that restrict our operations in a manner that materially adversely effects our operations and could result in fines, penalties or awards that could materially impair our financial condition and even threaten our continued operation as a going concern.

We will be subject to foreign government regulation and environmental, health and safety concerns that may adversely affect our business. As our business expands outside of the United States, our operations will be subject to the environmental, health and safety laws of the countries where we do business, including permitting and compliance requirements that address the similar risks as do the laws in the United States, as well as international legal requirements such as those applicable to the transportation of hazardous materials. Depending on the country or region, these laws could be as stringent as those in the U.S., or they could be less stringent or not as strictly enforced. In some countries in which we are interested in expanding our business, such as Mexico and China, the relevant environmental regulatory and enforcement frameworks are in flux and subject to change. Compliance with these requirements will cause our business to incur costs, and failure to comply with these requirements could adversely affect our business.

In the event we are unable to present and operate our AquaRefining process and operations as safe and environmentally responsible, we may face opposition from local governments, residents or public interest groups to the installation and operation of our facilities.

Risks Related to Owning Our Common Stock

The market price of our shares may be subject to fluctuation and volatility. You could lose all or part of your investment. The market price of our common stock is subject to wide fluctuations in response to various factors, some of which are beyond our control. Since January 1, 2024, the reported high and low sales prices of our common stock have ranged from $15.18 to $1.44 through March 18, 2025. The market price of our shares on the NASDAQ Capital Market may fluctuate as a result of a number of factors, some of which are beyond our control, including, but not limited to:

- actual or anticipated variations in our and our competitors' results of operations and financial condition;
- changes in earnings estimates or recommendations by securities analysts, if our shares are covered by analysts;
- development of technological innovations or new competitive products by others;
- regulatory developments and the decisions of regulatory authorities as to the approval or rejection of new or modified products;
- our sale or proposed sale, or the sale by our significant stockholders, of our shares or other securities in the future;
- changes in key personnel;
- success or failure of our research and development projects or those of our competitors;
- the trading volume of our shares; and
- general economic and market conditions and other factors, including factors unrelated to our operating performance.

These factors and any corresponding price fluctuations may materially and adversely affect the market price of our shares and result in substantial losses being incurred by our investors. In the past, following periods of market volatility, public company stockholders have often instituted securities class action litigation. If we were involved in securities litigation, it could impose a substantial cost upon us and divert the resources and attention of our management from our business.

If securities or industry analysts do not continue to publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline. The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If industry analysts cease coverage of us, the trading price for our common stock would be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline. In addition, independent industry analysts may provide reviews of our AquaRefining technology, as well as competitive technologies, and perception of our offerings in the marketplace may be significantly influenced by these reviews. We have no control over what these industry analysts report, and because industry analysts may influence current and potential customers, our brand could be harmed if they do not provide a positive review of our products and platform capabilities or view us as a market leader.

We may be at an increased risk of securities class action litigation. Historically, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because early-stage companies have experienced significant stock price volatility in recent years. If we were to be sued, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business. In 2017, a securities class action lawsuit and shareholder derivative lawsuit were filed against us. In 2021, we were able to settle both actions through our issuance of $500,000 of our common shares and our adoption of limited corporate governance reforms, however we incurred significant legal costs in defending both actions and our management was required to devote significant time in managing the defense of the actions.

We maintain director and officer insurance that we regard as reasonably adequate to protect us from potential claims; however, we are responsible for meeting certain deductibles under the policies and, in any event, we cannot assure you that the insurance coverage will adequately protect us from claims made. Further, the costs of insurance may increase and the availability of coverage may decrease. As a result, we may not be able to maintain our current levels of insurance at a reasonable cost, or at all, which might make it more difficult to attract qualified candidates to serve as executive officers or directors.

***Future sales of substantial amounts of our common stock, or the possibility that such sales could occur, could adversely affect the market price of our common* stock.** We cannot predict the effect, if any, that future issuances or sales of our securities or the availability of our securities for future issuance or sale, will have on the market price of our common stock. Issuances or sales of substantial amounts of our securities, or the perception that such issuances or sales might occur, could negatively impact the market price of our common stock and the terms upon which we may obtain additional equity financing in the future.

***We have not paid dividends in the past and have no plans to pay dividends**.* We plan to reinvest all of our earnings, to the extent we have earnings, in order to pursue our business plan and cover operating costs and to otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock.

***Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable**.* Provisions of our certificate of incorporation and bylaws and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our certificate of incorporation and bylaws:

- limit who may call stockholder meetings;
- do not provide for cumulative voting rights;
- establish an advance notice procedure for stockholders' proposals to be brought before an annual meeting, including proposed nominations of persons for election to our board of directors, and
- provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

In addition, Section 203 of the Delaware General Corporation Law may limit our ability to engage in any business combination with a person who beneficially owns 15% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock.

***Our bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with the Company**.* Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim against us or any our directors, officers or other employees arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us or any our directors, officers or other employees governed by the internal affairs doctrine. This forum selection provision in our bylaws may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or any of our directors, officers or other employees.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

At Aqua Metals, Inc., we are committed to protecting our information systems, data, and sensitive information from unauthorized access, breaches, and cyber-attacks. In this section, we provide an overview of our cybersecurity practices and the measures we have implemented to mitigate cybersecurity risks. We have established comprehensive cybersecurity policies and procedures that outline the standards and guidelines for safeguarding our digital assets. These policies cover areas such as access controls, data encryption, network security, incident response, and employee awareness training. We regularly conduct thorough assessments to identify and evaluate potential cybersecurity risks. These assessments help us understand our vulnerabilities and prioritize our efforts to mitigate those risks. We have implemented risk management strategies that include proactive monitoring, and vulnerability scanning. Due to evolving cybersecurity threats, it has and will continue to be difficult to prevent, detect, mitigate, and remediate cybersecurity incidents. While we have not experienced any material cybersecurity threats or incidents as of the date of this Report, our cybersecurity program might not be able to prevent or mitigate future successful attacks, threats or incidents.

To prevent cyber threats, we have implemented a multi-layered approach to security. This includes firewalls, intrusion detection and prevention systems, and regular software patching. We also enforce strong password policies and implement two-factor authentication for sensitive systems. In the event of a cybersecurity incident, we have a well-defined incident response plan in place. This plan includes procedures for containment, investigation, and recovery. We also maintain backups of critical data to ensure business continuity in case of a breach or system failure.

We believe that cybersecurity is a shared responsibility. We provide regular training and awareness programs to educate our employees about best practices, potential threats, and their role in maintaining a secure environment. This includes phishing awareness, social engineering training, and ongoing communication about emerging threats.

Governance

Cybersecurity holds a critical position within our risk management framework, drawing significant attention from both our Board and management. Oversight of cybersecurity risks is vested in our Audit Committee, which regularly receives updates from senior management. These updates, provided as needed, feature insights from our leaders in information security. Topics covered include the identification of existing and emerging cybersecurity threats, progress reports on risk mitigation efforts, disclosure of cybersecurity incidents, and updates on key information security initiatives. Furthermore, our Board members engage in informal discussions with management regarding cybersecurity news and assess any revisions made to our cybersecurity risk management strategies.

Item 2. Properties

Our executive offices are presently located in 4,183 square feet of class A office space in Reno, Nevada. We lease this facility at a lease rate of approximately $13,000 per month. On March 14, 2024, we extended the operating lease for our headquarters at 5370 Kietzke Lane, Reno, NV. The lease term expires April 1, 2026.

We have developed and lease an Innovation Center focused on applying Aqua Metals technology to lithium-ion battery recycling. We lease this facility at a lease rate of approximately $12,000 per month. On June 9, 2024, we extended the operating lease for our Innovation Center located at 160 Denmark Dr, McCarran, NV. The lease term expires on December 31, 2027.

In February 2023, we purchased a property located in TRIC. The property includes both the land and an existing building. The land totals approximately five acres and the building is approximately 21,000 square feet. The Company is currently redeveloping the existing facility and installing our first commercial-scale Li AquaRefining system, which will process an estimated 7,000 tonnes of materials annually. The Company is also exploring plans to develop the remaining land on the property to expand capacity and operations.

Item 3. Legal Proceedings

For a description of our material pending legal proceedings, please see Note 14, Commitments and Contingencies, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Capital Market under the symbol "AQMS."

Holders of Record

As of March 18, 2025, there were nine holders of record of our common stock.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We presently intend to retain earnings, if any, to finance the operation and expansion of our business.

Equity Compensation Plan Information

We have adopted the Aqua Metals, Inc. 2014 Stock Incentive Plan providing for the grant of non-qualified stock options and incentive stock options to purchase shares of our common stock and for the grant of restricted and unrestricted share grants. We have reserved 2,127,306 shares of our common stock under the plan. All of our officers, directors, employees and consultants are eligible to participate under the plan. The purpose of the plan is to provide eligible participants with an opportunity to acquire an ownership interest in our company. This plan expired in 2024.

In 2019, our board of directors adopted the Aqua Metals, Inc. 2019 Stock Incentive Plan (the "2019 Plan"). A total of 1,400,000 shares of common stock was authorized for issuance pursuant to the 2019 Plan. The 2019 Plan provides for the following types of stock-based awards: incentive stock options; non-statutory stock options; restricted stock; and performance stock. The 2019 Plan, under which equity incentives may be granted to employees and directors under incentive and non-statutory agreements, requires that the option price may not be less than the fair value of the stock at the date the option is granted. Option awards are exercisable until their expiration, which may not exceed 10 years from the grant date.

The following table sets forth the number and weighted-average exercise price of securities to be issued upon exercise of outstanding options and warrants, and the number of securities remaining available for future issuance, under our equity compensation plan at December 31, 2024.

	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options and Warrants	Number of Securities Remaining Available for Future Issuance Under Equity compensation Plans
Equity compensation plans approved by stockholders	1,133,687(1)	$ —	—
Equity compensation plans not approved by stockholders	1,823,856(2)	$ 5.72	

(1) Includes 311,850 relating to restricted stock units granted under the 2019 Plan in excess of the shares of common stock currently authorized for issuance pursuant to the 2019 Plan. Accordingly, the 311,850 RSUs were issued pursuant to the condition that settlement will not occur unless the stockholders of the Company approve an increase in the number of shares reserved under the 2019 at the Company's 2025 annual meeting of stockholders and that the RSUs will terminate if the stockholders do not approve the share increase.

Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 6. Reserved

None.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

General

Aqua Metals is engaged in the business of applying its commercialized clean, water-based, recycling technology principles to develop cost-efficient recycling solutions for both lead and lithium-ion ("Li") batteries. Our recycling process is a patented hydro and electrometallurgical technology that is an innovative, proprietary and patented process we developed and named AquaRefining. AquaRefining is a low-emissions, closed-loop recycling technology that has the potential to replace polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and with minimal waste. The modular "Aqualyzers" cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy.

This breakthrough technology was initially applied in the lead acid battery (LAB) recycling industry, building the first integrated recycling system for breaking LAB and recovering pure metal. In 2019, we operated our demonstration AquaRefinery at commercial quantity production levels and produced over 35,000 'AquaRefined' ingots operating twenty-four hours a day, seven days a week for sustained periods of time.

We are also applying our commercialized clean, water-based recycling technology principles with the goal of developing the cleanest and most cost-efficient recycling solution for lithium-ion batteries. We believe our process has the potential to produce higher quality products at a lower operating cost without the damaging effects of furnaces and greenhouse emissions.

In February 2021, we announced our entry into the lithium-ion battery (LiB) recycling market through a key provisional patent we filed that applies the same innovative AquaRefining approach. In August 2021, we announced we had established our Innovation Center in TRIC focused on applying our proven technology to LiB recycling research and development and prototyping. Our strategic decision to apply our proven clean, closed-loop hydrometallurgical and electrochemical recycling experience to lithium-ion battery recycling is designed to meet the growing demand for critical metals driven by the global transition to electric vehicles; growth in internet data centers; and alternative energy applications including solar, wind, and grid-scale storage.

During the first half of 2022, we announced our ability to recover copper, lithium hydroxide, nickel, and cobalt from lithium-ion battery 'black mass' at bench scale at the Company's Innovation Center. During 2022, we built our fully-integrated pilot system, located within the Company's Innovation Center, which is designed to allow Aqua Metals to be the first company in North America to recycle battery minerals from black mass, sell them in the U.S. and position the Company as the first LiB recycler in North America to align with the U.S. government's goal of retaining strategic battery minerals within the domestic supply chain.

During 2022, we conducted environmental comparisons based on Argonne National Lab's modeling of lithium battery supply chains – called EverBatt. The initial results indicate that AquaRefining is a cleaner approach to LiB recycling, producing far less CO2 waste streams than smelting or chemical-driven hydrometallurgical processes currently on the market. In December 2022, we completed equipment installation and began to operate our first-of-a-kind LiB recycling facility, utilizing electricity as the catalyst to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. In January 2023, Aqua Metals recovered its first metals from recycling lithium batteries using the patent-pending Li AquaRefining process.

In February 2023, we acquired a five-acre parcel of land with an existing building to begin development of our Li AquaRefining recycling campus at TRIC. When fully developed, the facility we envision is designed to process lithium-ion battery material each year using our proprietary Li AquaRefining technology. Subject to our receipt of the required additional capital, we expect to complete development of phase one, including all equipment installation within 3-4 quarters of securing the additional capital and to complete the commissioning and scaling of this operation at the new campus within 2 quarters of completion of the development. The Company is planning for a phased development of the campus, beginning with the already commenced redevelopment of an existing building on-site into the first commercial-scale Li AquaRefinery.

In the first half of 2024, we made significant progress on the construction of the planned first phase of the commercial Li AquaRefinery and we continue to pursue the required funding for the completion of the phase one development of our five-acre recycling campus through various sources, including debt, project finance, joint venture and strategic investment options. At the end of 2024, we completed the first multi-week continuous 7 days x 24 hours operation campaign at our pilot facility, demonstrating the ability to deliver exceptional recovery rates and produce battery-grade critical minerals.

In February 2025, the Company announced its expanded vision to more than double the output of lithium carbonate by deferring the plating of nickel and cobalt to metal form until the next phase. This allows for several improvements to the early years of scaling – reduced CAPEX by simplifying the product set to lithium carbonate and MHP (Mixed Hydroxide Precipitates), more volume of product due to the simplification, further de-risk with the simplified product set, more revenue and overall operating margins with a much improved payback on remaining capital to be financed. The Company continues to seek the funding to complete the Phase One.

During the year ended December 31, 2024, we issued 1,195,033 shares of common stock pursuant to an at the market issuance sales agreement ("ATM") for net proceeds of $5 million. On May 14, 2024, we completed a public offering of 1,006,250 shares of our common stock, at the public offering price of $7.80 per share. In connection with the sale of common stock, the Company issued warrants to purchase shares of common stock at the rate of one warrant for every share of purchased common stock, at the price of $0.20 per warrant. After the deduction of the underwriter's discount and expenses payable by us, we received net proceeds of $7.3 million. During the year ended December 31, 2023, we issued 162,215 shares of common stock pursuant to an at the market issuance sales agreement for net proceeds of $3.8 million. We raised a net of $18.3 million in the third quarter of 2023 from the public offering of our common shares and a net of $4.6 million from the sale of our common stock to Yulho. In connection with the sale of common stock in 2023, the Company issued warrants to purchase 18,193 shares of the Company's common stock to the underwriter of the Company's public offering and the Company issued a warrant to purchase 10,288 shares of the Company's common stock to the placement agent of the transaction in connection with the Yulho transaction.

Our current focus is building and operating our first-of-a-kind lithium battery recycling facility, utilizing electricity to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. We are also pursuing potential partnership and/or joint ventures agreements and licensing agreements, particularly as our Li AquaRefining continues to develop and improve. We believe that Aqua Metals is in a position to become one of the few critical minerals recovery players for which our environmental and economic value proposition should generate both great commercial wins and potentially government grants to accelerate our credibility and progress.

Effective November 5, 2024, we effected a one-for-20 reverse stock split of our issued and outstanding common shares. All share and share price information set forth in this report has been adjusted retrospectively to reflect this reverse stock split.

Results of Operations for the Fiscal Year Ended December 31, 2024 Compared to the Fiscal Year Ended December 31, 2023

We did not engage in commercial operations in 2024 and 2023. Our operations have been devoted to developing our Li AquaRefining battery recycling technology. During the year ended December 31, 2023, revenue resulted from the sale of inventory consisting of lead compounds that were generated during operation of our former TRIC facility. The following table summarizes results of operations with respect to the items set forth below for the twelve months ended December 31, 2024 and 2023 together with the percentage change from the twelve months ended December 31, 2023 for those items (in thousands).

	Year ended December 31,			
	2024	2023	Favorable (Unfavorable)	% Change
Product sales	$ —	$ 25	$ (25)	(100)%
Plant operations	7,213	6,282	(931)	(15)%
Research and development cost	1,587	1,741	154	9%
Impairment expense	2,640	4,851	2,211	46%
Loss (gain) on disposal of property, plant and equipment	440	(23)	(463)	2013%
General and administrative expense	11,967	11,638	(329)	(3)%
Total operating expense	$ 23,847	$ 24,489	$ 642	3%

Except for nominal revenue generated from the sale of lead finished goods, we did not generate revenue during the years ended December 31, 2024 and December 31, 2023. Plant activity during 2024 and 2023 consisted of testing our lithium-ion battery recycling technology, developing the prototype system activities, and quickly advancing from the planning and validation phases to execution and operation of our pilot facility and the build out of our commercial facility.

Plant operations includes supplies and related costs, salaries and benefits, consulting and outside services costs, depreciation and amortization costs, insurance, travel and overhead costs. Plant operations increased approximately $931,000 or 15% for the twelve months ended December 31, 2024, as compared to the twelve months ended December 31, 2023. This increase was primarily driven by a $758,000 rise in payroll and related fees, as we hired additional staff to operate the pilot facility, process black mass and build out of our commercial facility during the first seven months of the year in addition to an increase of $173,000 in insurance and other service costs. In August 2024, the Company announced that due to a delay in funding, it has completed a reduction in force of personnel hired largely in expectation of securing the required funding for the completion of the Sierra ARC and commencement of operation. We expect payroll costs to be lower until funding is received and operations resume.

Research and development cost includes expenditures related to the improvement of the AquaRefining technology and the development of our lithium-ion battery recycling process. During the twelve months ended December 31, 2024, research and development costs decreased approximately $154,000 or 9% from the comparable period in 2023. Research and development is a key part of our business strategy and includes our focus on improving the Company's proprietary technology for LAB recycling and advancing our research related to the application of AquaRefining to recycling lithium-ion batteries. The decrease was driven by a reduction in payroll and payroll related fees of approximately $159,000, as we completed a reduction of force during August 2024.

For the year ended December 31, 2024, we recognized a non-cash impairment charge of $2,640,000 for impairment on equipment deposits due to the change in our recycling strategy by prioritizing mixed hydroxide precipitate, to accelerate commercialization and reduce remaining capital requirements to complete Phase One build-out of our recycling campus at TRIC. For the year ended December 31, 2023, we recognized a non-cash impairment charge of $4,851,000, subsequent to an analysis of our investment and construction in progress ("CIP") with regard to our investment in LINICO and ACME Metals. We recognized a loss on the investment in LINICO of approximately $1,400,000 during the year ended December 31, 2023 as the result of the sale of our LINICO common stock to LINICO's parent Comstock Inc., for $600,000 payable in twelve equal monthly installments commencing in January 2024. In addition, we recognized a loss of $3,451,000 related to the ACME CIP as a result of the suspension of the development of recycling operations at the ACME Metals Taiwanese facility. During 2023, management shifted focus away from the original service under the ACME lead recycling license agreement to a new primary focus on the Lithium recycling business as a Company. As a result, management projected a decrease in the utilization of the ACME plant and its related operations, and assessed that the future expected cash flows connected with ACME are at or near zero.

We recognized a loss on disposal of property, plant and equipment of approximately $440,000 during the twelve months ended December 31, 2024 compared to a gain of $23,000 for the twelve months ended December 31, 2023.

General and administrative expense increased approximately $329,000, or 3%, for the twelve months ended December 31, 2024 compared to the twelve months ended December 31, 2023. The increase in general and administrative expenses for the twelve months ended December 31, 2024 was primarily driven by higher professional fees associated with our efforts to raise capital.

The following table summarizes our other income and interest expense for the years ended December 31, 2024 and December 31, 2023 together with the percentage change in those items (in thousands).

	Year ended December 31,			
	2024	2023	Favorable (Unfavorable)	% Change
Interest and other income	$ 376	$ 1,147	$ (771)	(67)%
Interest expense	(574)	(621)	47	(8)%
Change in fair value of warrant liability	(507)	—	(507)	N/A
Total other income (expense), net	$ (705)	$ 526	$ (1,231)	(234)%

For the year ended December 31, 2024 and December 31, 2023, and we recorded approximately $376,000 and $1,147,000 in interest and other income, respectively, a decrease of $771,000 or 67%. The decrease in interest and other revenue is attributable to decreased interest on our bank deposits and the conclusion of our non-recurring engineering arrangement with 6K Energy at the end of 2023.

We recognized interest expense of $574,000 for the year ended December 31, 2024 and $621,000 for the year ended December 31, 2023. The decrease was partially due to a reduction in the outstanding balance of the note payable during 2023.

For the year ended December 31, 2024, the Company recognized a change in fair value of warrant liability of $507,000, which was primarily due to the remeasurement of the warrants issued in December 2024.

Liquidity and Capital Resources

As of December 31, 2024, we had total assets of $26,365,000 and working capital deficit of $(3,538,000).

The following table summarizes our cash provided by (used in) operating, investing and financing activities (in thousands):

	Year ended December 31,	
	2024	2023
Net cash used in operating activities	$ (13,632)	$ (3,193)
Net cash used in investing activities	$ (11,636)	$ (9,813)
Net cash provided by financing activities	$ 12,825	$ 22,446

Net cash used in operating activities

Net cash used in operating activities for the years ended December 31, 2024 and December 31, 2023 was approximately $13,632,000 and $3,193,000, respectively. Net cash used in operating activities during each of these periods consisted primarily of our net loss adjusted for non-cash items such as depreciation, amortization, and stock-based compensation charges as well as net changes in working capital. During the year ended December 31, 2024, we recognized approximately $2,640,000 expense for impairment on equipment deposits due to the change in our recycling strategy by prioritizing mixed hydroxide precipitate, to accelerate commercialization and reduce remaining capital requirements to complete Phase One build-out of our recycling campus at TRIC. During the year ended December 31, 2023, we recognized $12,278,000 proceeds from sales and leasing of building to LINICO, $1,400,000 expense for impairment on LINICO investment and approximately $3,451,000 expense for impairment on ACME CIP.

Net cash used in investing activities

Net cash used in investing activities for the year ended December 31, 2024 was $11,636,000 compared to $9,813,000 for the year ended December 31, 2023. During these periods, net cash in investing operations primarily includes fixed asset acquisitions, deposits for future fixed asset purchases and proceeds received from sale of equipment, respectively. During the year ended December 31, 2024, we received $500,000 from the note receivable with LINICO.

Net cash provided by financing activities

Net cash provided by financing activities for the year ended December 31, 2024 consisted of $5,014,000 in net proceeds from the sale of Aqua Metals shares pursuant to the at-the-market offering, or ATM, $1,500,000 in net proceeds from the loan agreement entered into on December 18, 2024, and $7,306,000 in net proceeds from our May 2024 public offering, offset by $552,000 related to tax withholdings to cover RSU vesting and $424,000 related to debt issuance costs. Net cash provided by financing activities for the year ended December 31, 2023 consisted of $3,786,000 in net proceeds from the sale of Aqua Metals shares pursuant to the at-the-market offering, or ATM, $2,931,000 in net proceeds from the loan agreement secured with Summit Investment Services, LLC, $18,318,000 in net proceeds from our July 2023 public offering and $4,629,000 in net proceeds from the Yulho transaction, offset by the $6,000,000 used to pay off the note payable and by $1,092,000 related to tax withholdings to cover RSU vesting.

As of December 31, 2024, we had total cash of $4,079,000 and working capital deficit of $(3,538,000). As of the date of this report, we believe that we will require additional capital in order to fund our current level of ongoing costs over the next twelve months and move forward with our current business strategy. There can be no assurance that we will be able to acquire the necessary funding on commercially reasonable terms or at all. We intend to seek funds through the sale of equity or debt financing. Funding that includes the sale of our equity may be dilutive. If such financing is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations.

Due to our lack of revenue from commercial operations, significant losses and need for additional capital, there is substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of our consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of expenses during the period. Significant items subject to such estimates and assumptions include the carrying amount and valuation of long-lived assets, the valuation of conversion features of convertible debt, valuation allowances for deferred tax assets, the determination of estimated asset retirement obligations, the determination of stock option expense, and the determination of the fair value of stock warrants issued. Our actual results could differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K, we believe that the following accounting policies are the most critical to assist stockholders and investors reading the consolidated financial statements in fully understanding and evaluating our financial condition and results of operations.

Property, plant and equipment, net

Property, plant and equipment are stated at cost net of accumulated depreciation. Depreciation on property and equipment is calculated on the straight-line basis over the estimated useful lives of the assets. Leasehold improvements are depreciated over the shorter of the life of the asset or the remaining term of the lease. Upon the retirement or sale of our property and equipment, the cost and associated accumulated depreciation are removed from the consolidated balance sheet, and the resulting gain or loss is reflected on the consolidated statement of operations. Maintenance and repair expenditures are expensed as incurred while major improvements that increase the functionality, output or expected life of an asset are capitalized and depreciated over the estimated useful life.

We periodically evaluate our property, plant and equipment assets for indications that the carrying amount of an asset may not be recoverable. At December 31, 2024, we recognized an impairment of approximately $2,640,000 for impairment on equipment deposits due to the change in our recycling strategy by prioritizing mixed hydroxide precipitate, to accelerate commercialization and reduce remaining capital requirements to complete Phase One build-out of our recycling campus at TRIC. The Company does not expect further impairments on remaining deposit amounts as this equipment is needed in the current plant design. During the year 2023, management shifted focus away from the original service under the license agreement (Lead business) to a new focus (Lithium business) as a Company. As such, management projected a decline in the utilization of the ACME plant and it's related operations. At December 31, 2023, we recognized an impairment of approximately $3,451,000 to equipment under construction that was not yet capitalized related to the ACME CIP as a result of the suspension of the development of recycling operations at the ACME Metals Taiwanese facility.

Income taxes

We account for income taxes in accordance with the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred assets and liabilities are recognized based upon anticipated future tax consequences attributable to differences between financial statement carrying amounts of assets and liabilities and their respective tax bases. The provision for income taxes is comprised of the current tax liability and the changes in deferred tax assets and liabilities. We established a valuation allowance to the extent that it is more-likely-than-not that deferred tax assets will not be recoverable against future taxable income.

We recognize the effect of uncertain income tax positions only if those positions are more-likely-than-not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

Warrants

The Company evaluates all freestanding warrants to determine whether they should be classified as equity or liability or asset instruments in accordance with ASC 815-40. The Company classifies common stock purchase warrants as equity if the contracts (i) require physical settlement or net-share settlement or (ii) give the Company a choice of net-cash settlement or settlement in its own shares (physical settlement or net-share settlement). The Company classifies any contracts that (i) require net-cash settlement (including a requirement to net cash settle the contract if an event occurs and if that event is outside the control of the Company), (ii) give the counterparty a choice of net-cash settlement or settlement in shares (physical settlement or net-share settlement), or (iii) contain reset provisions as either an asset or a liability. Additionally, warrants that include variable settlement provisions triggered by a change in control are classified as liabilities. The Company assesses classification of its freestanding derivatives at each reporting date to determine whether a change in classification between equity and liabilities is required.

The value of the equity classified common stock purchase warrants are estimated as of the issuance date using the Black-Scholes pricing model.

Liability classified warrants are initially recorded at fair value and remeasured at each reporting date, with changes in fair value recognized in earnings. As of December 31, 2024, the Company had outstanding warrants classified as liabilities. These instruments are valued using the Monte-Carlo option pricing model utilizing several key assumptions, including share price volatility, the risk-free rate of return, the expected dividend yield and other warrant design features

Stock-based compensation

We recognize compensation expense for stock-based compensation in accordance with ASC 718 “Compensation – Stock Compensation.” For employee restricted stock units, we calculate the fair value of the award using the closing price of the common stock on date of grant date.

For restricted stock unit awards with market conditions the fair value of the award is calculated on the date of grant using a Monte Carlo simulation model utilizing several key assumptions, including share price volatility, the risk-free rate of return, the expected dividend yield and other award design features.

For restricted stock unit awards with performance conditions, consisting of our supplemental retention awards granted on October 3, 2024, compensation cost is recognized in the period in which it becomes probable that the performance target will be achieved and represents the compensation cost attributable to the period for which the service or goods already have been provided. These awards are based on a fixed dollar amount settled in a variable number of shares and as a result are liability classified. The fair value of these awards is based on the fixed dollar amount dictated in the award agreements. As the Company has considered the performance conditions are not probable to be met as of December 31, 2024, no compensation cost has been recorded in the consolidated financial statements.

If at any point in time the Company does not currently have a sufficient quantity of shares authorized for issuance under their approved stock incentive plan, the Company has established a sequencing policy that shares are issued to grants with the earliest inception date first. When multiple grants have the same inception date, shares are first allocated to non-named executive officers, then to shares with satisfied market and performance conditions, and last to service-only grants made to named executive officers. Therefore, grants to named executive officers with service-only conditions with the latest grant date will be reclassified to liabilities first. For service-based grants, the value of grants required to be reclassified to liabilities will be re-measured on a periodic basis based on the closing fair market value of our common stock.

The Company recognizes forfeitures as they occur.

Recent accounting pronouncements

See discussion of recent accounting pronouncements in Note 2 of the Consolidated Financial Statements located in Item 8 in this Annual Report.

Material cash requirements

As of December 31, 2024, we and our subsidiaries had outstanding $4,500,000 amount of indebtedness and approximately $408,000 interest payments due in the succeeding 12 months. As of December 31, 2024, our total minimum future lease payments were $338,000, due in the succeeding 12 months. For details regarding our indebtedness and lease obligations, refer to Note 10, Leases, and Note 11, Note payable, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Contractual Obligations and Commitments

Operating lease obligations

We currently have two operating leases for real estate. We lease our Reno and McCarran, Nevada spaces under non-cancelable operating leases. We elected to exercise our first extension option provided for in the Reno, Nevada lease agreement, which extended the current term of the lease to April 1, 2026. The initial lease term for our mixed office and warehouse space in McCarran, Nevada expired on December 31, 2021. We elected to exercise our second extension option provided for in the McCarran, Nevada lease agreement, which extended the current term of the lease to December 31, 2027.

Finance lease obligation

We currently maintain one finance lease for equipment. On April 1, 2024 the Company entered into a finance lease for laboratory equipment which expires in 2029.

Notes payable

Aqua Metals Reno, Inc. entered into a $3,000,000 loan agreement with Summit Investment Services, LLC, a Nevada limited liability company (the “Lender”) on February 1, 2023 and due on April 27, 2025. On December 18, 2024, Aqua Metals, Inc. entered into a Securities Purchase Agreement with eight accredited investors in connection with a private placement of secured promissory notes (“Notes”) in the aggregate principal amount of $1,500,000 and common stock purchase warrants (“Warrants) to purchase 750,000 shares of the Company’s common stock. See Note 11 in the accompanying notes to the consolidated financial statements for additional information.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable.

Item 8. Financial Statements and Supplementary Data

Index To Consolidated Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Aqua Metals, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Aqua Metals, Inc. (the "Company") as of December 31, 2024 and 2023, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2024, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has incurred substantial operating losses and negative cash flows from operations since inception that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to this matter are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits.

We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which it relates.

Critical Audit Matter – Equity-Classified Warrants

As described in Note 12 and Note 13, the Company issued (1) warrants to purchase 39,125 shares and 1,006,250 shares of the Company's common stock in connection with the Company's May 2024 public offering of common stock, and (2) warrants to purchase 750,000 shares of the Company's common stock in connection with the Company's December 2024 offering of secured promissory notes. The Company evaluated whether the warrants were in the scope of ASC Topic 480 *Distinguishing Liabilities from Equity*, which discusses the accounting for instruments with characteristics of both liabilities and equity. The application of the requirements in ASC Topic 480, and the resulting classification conclusion, is dependent on whether certain criteria are met. Based on its analysis, the Company concluded that (1) the 1,045,375 total warrants issued in May 2024 did not meet any of the criteria to be subject to liability classification and are therefore classified as equity and (2) the 750,000 warrants issued in December 2024 met the criteria to be subject to liability classification.

We identified the classification of the warrants as a critical audit matter. The principal considerations for that determination included the complexity and effort required in identifying all relevant features of and obligations under the instruments for evaluation against the criteria for classification. This required a high degree of auditor effort, including specialized skills and knowledge, and complex auditor judgment in evaluating the features of and obligations under the warrants and the determination of whether such features meet the criteria for liability-classification.

The primary procedures we performed to address this critical audit matter included:

- We obtained an understanding of management's process for identifying and evaluating the critical terms of the warrant agreements in determining the classification.

- With the assistance of professionals in our firm that have specialized skills and knowledge in accounting for debt and equity instruments:
  - We evaluated management's analysis and conclusions regarding the relevant provisions and features of the warrants in light of relevant guidance and the criteria for classification.

  - We read the securities purchase agreement and underlying warrant agreements to identify the relevant features and settlement provisions for our evaluation.

  - We independently evaluated the relevant features and settlement provisions of the warrants under relevant guidance considering the criteria for classification.

/s/ Forvis Mazars, LLP

We have served as the Company's auditor since 2023.

New York, New York

March 31, 2025

AQUA METALS, INC.
Consolidated Balance Sheets
(in thousands, except share and per share amounts)

	December 31, 2024	December 31, 2023
ASSETS		
Current assets		
Cash and cash equivalents	$ 4,079	$ 16,522
Note receivable - LINICO	100	600
Accounts receivable	—	67
Inventory	251	929
Prepaid expenses and other current assets	214	181
Total current assets	4,644	18,299
Non-current assets		
Property, plant and equipment, net	16,473	10,347
Intellectual property, net	146	281
Other assets	5,102	4,673
Total non-current assets	21,721	15,301
Total assets	$ 26,365	$ 33,600
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 1,227	$ 1,836
Accrued expenses	3,130	2,467
Lease liability, current portion	289	275
Notes payable related-party, current portion	306	—
Notes payable, current portion	3,230	35
Total current liabilities	8,182	4,613
Lease liability, non-current portion	446	—
Notes payable, non-current portion	—	2,923
Warrant liability	1,493	—
Total liabilities	10,121	7,536
Commitments and contingencies (see Note 14)		
Stockholders' equity		
Common stock; $0.001 par value; 300,000,000 shares authorized; 7,760,255 and 7,730,836, shares issued and outstanding as of December 31, 2024, respectively and 5,415,433 and 5,394,005 shares issued and outstanding as of December 31, 2023	8	5
Additional paid-in capital	264,198	249,790
Accumulated deficit	(247,770)	(223,215)
Treasury stock, at cost; common shares: 29,419 and 21,428 as of December 31, 2024 and December 31, 2023, respectively	(192)	(516)
Total stockholders' equity	16,244	26,064
Total liabilities and stockholders' equity	$ 26,365	$ 33,600

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Consolidated Statements of Operations
(in thousands, except share and per share amounts)

	Year ended December 31, 2024	Year ended December 31, 2023
Product sales	$ —	$ 25
Operating cost and expense		
Plant operations	7,213	6,282
Research and development cost	1,587	1,741
Impairment expense	2,640	4,851
Loss (gain) on disposal of property, plant and equipment	440	(23)
General and administrative expense	11,967	11,638
Total operating expense	23,847	24,489
Loss from operations	(23,847)	(24,464)
Other income and expense		
Interest and other income	376	1,147
Interest expense	(574)	(621)
Change in fair value of warrant liability	(507)	—
Total other income (expense), net	(705)	526
Loss before income tax expense	(24,552)	(23,938)
Income tax expense	(3)	—
Net loss	$ (24,555)	$ (23,938)
Weighted average shares outstanding, basic and diluted	6,419,607	4,696,597
Basic and diluted net loss per share	$ (3.83)	$ (5.10)

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Consolidated Statements of Stockholders' Equity
(in thousands, except share amounts)

	Common Stock				Treasury Stock		
	Shares	Amount	Additional Paid-in Capital	Accumulated Deficit	Shares	Amount	Total Stockholders' Equity (Deficit)
Balances, December 31, 2022	3,974,088	$ 4	$ 220,189	$ (199,277)	—	$ —	20,916
Stock-based compensation	—	—	2,532	—	—	—	2,532
RSUs issued for consulting services	789	—	12	—	—	—	12
Common stock issued to employees and directors, includes RSUs vesting and withholdings to satisfy tax withholdings on RSUs vesting	81,675	—	(578)	—	21,428	(516)	(1,094)
Common stock issued for public offering, net of $1,713 transaction costs	909,650	1	18,317	—	—	—	18,318
Common stock issued for Yulho agreement, net of $372 transaction costs	227,273	—	4,629	—	—	—	4,629
Warrant expense related to Yulho agreement	—	—	181	—	—	—	181
Common stock issued for employee stock purchase plan sales	9,635	—	122	—	—	—	122
Common stock issued for class action settlement	23,468	—	501	—	—	—	501
Common stock issued for ATM share sales, net of $119 transaction costs	162,215	—	3,789	—	—	—	3,789
Common stock issued for director fees	5,212	—	96	—	—	—	96
Net loss	—	—	—	(23,938)	—	—	(23,938)
Balances, December 31, 2023	5,394,005	$ 5	$ 249,790	$ (223,215)	21,428	$ (516)	$ 26,064
Stock-based compensation	—	—	2,726	—	—	—	2,726
RSUs issued for consulting services	20,111	—	150	—	—	—	150
Common stock issued to employees and directors, includes RSUs vesting and withholdings to satisfy tax withholdings on RSUs vesting	95,851	1	(876)	—	7,991	324	(551)
Common stock issued for public offering, net of $744 transaction costs	1,006,250	1	7,305	—	—	—	7,306
Common stock issued for employee stock purchase plan sales	10,635	—	54	—	—	—	54
Common stock issued for ATM share sales, net of $179 transaction costs	1,195,034	1	5,013	—	—	—	5,014
Common stock issued for director fees	9,428	—	37	—	—	—	37
Common stock cancelled for cash in lieu of fractional shares reverse split	(478)	—	(1)	—	—	—	(1)
Net loss	—	—	—	(24,555)	—	—	(24,555)
Balances, December 31, 2024	7,730,836	$ 8	$ 264,198	$ (247,770)	29,419	$ (192)	$ 16,244

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Consolidated Statements of Cash Flows
(in thousands)

	Year ended December 31, 2024	2023
Cash flows from operating activities:		
Net loss	$ (24,555)	$ (23,938)
Reconciliation of net loss to net cash used in operating activities		
Depreciation and ROU asset amortization	1,139	1,091
Amortization of intellectual property	135	180
Warrant expense	—	181
Fair value of common stock issued for consulting services	150	12
Fair value of common stock issued for director fees	37	96
Stock-based compensation	2,737	2,534
Amortization of deferred financing costs	73	128
Loss (gain) on disposal of property, plant and equipment	440	(23)
Impairment of equipment deposits	2,640	3,451
Impairment of LINICO investment	—	1,400
Inventory NRV adjustment	283	—
Write off of debt issuance costs	563	—
Accrued interest expense	10	—
Change in fair value of warrant liability	507	—
Changes in operating assets and liabilities		
Proceeds from sale and leasing of building	—	12,278
Accounts receivable	67	(55)
Inventory	396	(651)
Prepaid expenses and other current assets	(33)	82
Accounts payable	(21)	139
Accrued expenses	1,930	209
Other assets and liabilities	(130)	(307)
Net cash used in operating activities	(13,632)	(3,193)
Cash flows from investing activities:		
Purchases of property, plant and equipment	(7,921)	(5,598)
Proceeds from sale of equipment	22	70
Proceeds from note receivable	500	—
Equipment deposits	(4,237)	(4,285)
Net cash used in investing activities	(11,636)	(9,813)
Cash flows from financing activities:		
Proceeds from issuance of common stock, net of transaction costs	7,306	22,947
Proceeds from employee stock purchase plan	54	14
Payments on note payable	—	(6,000)
Principal payments on finance leases	(72)	—
Proceeds from note payable related-party, net	1,500	—
Proceeds from note payable, net	—	2,931
Cash paid for tax withholdings on RSUs vesting	(552)	(1,092)
Cash paid for reverse split fractional shares	(1)	—
Debt issuance costs	(424)	(140)
Proceeds from ATM, net	5,014	3,786
Net cash provided by financing activities	12,825	22,446
Net increase (decrease) in cash and cash equivalents	(12,443)	9,440
Cash and cash equivalents at beginning of period	16,522	7,082
Cash and cash equivalents at end of period	$ 4,079	$ 16,522

AQUA METALS, INC.
Consolidated Statements of Cash Flows
(in thousands)

(Continued)

	Year ended December 31,	
	2024	2023
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 333	$ 480
Cash paid for income taxes	$ 3	$ —
Supplemental disclosure of non-cash transactions		
Acquisitions of property, plant and equipment included in accounts payable	$ 485	$ 1,072
Acquisitions of property, plant and equipment included in accrued expenses	$ —	$ 1,857
Increase in note receivable resulting from sale of investment	$ —	$ 600
Increase in equity included in accrued expenses	$ —	$ 608

The accompanying notes are an integral part of these consolidated financial statements.

1. Organization and Operations

Aqua Metals is engaged in the business of applying its commercialized clean, water-based recycling technology principles to develop the clean and cost-efficient recycling solutions for both lead and lithium-ion ("Li") batteries. Our recycling process is a patented hydro- and electrometallurgical technology that is a novel, proprietary and patented process we developed and named AquaRefining. AquaRefining is a low-emissions, closed-loop recycling technology that replaces polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and with minimal waste. The modular "Aqualyzers" cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy.

We are in the process of demonstrating that Li AquaRefining, which is fundamentally non-polluting, can create the highest quality and highest yields of recovered minerals from lithium-ion batteries with lower waste streams and lower costs than existing alternatives.

For the lead market, our focus is on providing equipment and licensing of our lead acid battery recycling technologies in an enabler model which allows us to work with anyone in the industry globally and address the entire marketplace. Our focus for the lithium market includes operating our first-of-a-kind lithium battery recycling facility, utilizing electricity to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces.

Liquidity and Going Concern Assessment

For the years ended December 31, 2024 and 2023, the Company reported a net loss of $24,555,000 and $23,938,000, respectively, and cash used in operations of $13,632,000 and $3,193,000 (inclusive of $12,278,000 of non-recurring proceeds from the sale of real estate), respectively. As of December 31, 2024, the Company had cash and cash equivalents of approximately $4,079,000, a working capital deficit of approximately $(3,538,000) and an accumulated deficit of $247,770,000. In addition to cash required to fund operating activities, within the next 12 months, the Company will be required to pay cash to settle notes payable of $3,000,000 on April 27, 2025 and $1,500,000 on December 31, 2025. The Company has not generated revenues from commercial operations over the two years ended December 31, 2024 and 2023, except for nominal sales of lead finished goods, and expects to continue incurring losses for the foreseeable future.

Management believes that the Company does not have sufficient capital resources to sustain operations through at least the next twelve months from the date of this filing. Additionally, in view of the Company's expectation to incur significant losses for the foreseeable future it will be required to raise additional capital resources in order to fund its operations, although the availability of, and the Company's access to such resources, is not assured. Accordingly, management believes that there is substantial doubt regarding the Company's ability to continue operating as a going concern through the next twelve months from the date of this filing.

The accompanying consolidated financial statements have been prepared under the assumption the Company will continue to operate as a going concern, which contemplates the realization of assets and the settlement of liabilities in the normal course of business. The consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts of liabilities that may result from uncertainty related to the Company's ability to continue as a going concern.

2. Summary of Significant Accounting Policies

Basis of presentation and consolidation

The accompanying consolidated financial statements include those of Aqua Metals, Inc. and its subsidiaries (collectively, the “Company” or “Aqua Metals”), after elimination of all intercompany accounts and transactions. The Company has prepared the accompanying consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and pursuant to the rules and regulations of the United States Securities and Exchange Commission (the “SEC”).

Use of estimates

The preparation of the consolidated financial statements requires management of the Company to make a number of estimates and assumptions relating to the reported amount of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of expenses during the period. Significant items subject to such estimates and assumptions include the carrying amount and valuation of long-lived assets, valuation allowances for deferred tax assets, the determination of stock option expense and the determination of the fair value of stock warrants issued. Actual results could differ from those estimates.

Cash and cash equivalents

The Company considers all highly liquid instruments with original or remaining maturities of ninety days or less at the date of purchase to be cash equivalents. The Company maintains its cash balances in large financial institutions. Periodically, such balances may be in excess of federally insured limits.

Accounts receivable

The Company has traditionally sold its products to large well-established companies and extends credit without requiring collateral, based on an ongoing evaluation of the customer’s business prospects and financial condition. We determine if any allowance for credit losses using is required considering a combination of factors to reduce receivable balances to the net amount expected to be collected. As of December 31, 2024 and 2023, the Company had no trade accounts receivable balance and has not created an allowance for credit losses . The total accounts receivable balance as of December 31, 2023 consisted of proceeds from the non-recurring engineering agreement with 6K Energy.

Note receivable

The Company records notes receivable when it extends credit or financing to third parties. The Company evaluates notes receivable for collectability at each reporting period under the current expected credit loss (CECL) model, in accordance with ASC 326 (Financial Instruments – Credit Losses). If necessary, an allowance for doubtful accounts is recorded to reflect potential losses. As of December 31, 2024, we evaluated the need for an allowance for credit loss using the guidelines set forth in ASC 326 CECL, and have determined this note is fully collectible and, therefore, we have not recorded an allowance against the note receivable balance.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost is recorded on a first-in, first-out basis using the weighted average method. Net realizable value is determined as the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The Company records a write-down, if necessary, to reduce the carrying value of inventory to its net realizable value. The effect of these write-downs is to establish a new cost basis in the related inventory, which is not subsequently written up. During the twelve months ended December 31, 2024, we recorded write-downs of $283,000 which were included in plant operations in the condensed consolidated statement of operations.

Property, plant and equipment, net

Property, plant and equipment are stated at cost net of accumulated depreciation. Depreciation on property, plant and equipment is calculated on the straight-line basis over the estimated useful lives of the assets. Leasehold improvements are depreciated over the shorter of the life of the asset or the remaining term of the lease.

Property, plant and equipment are stated at cost net of accumulated depreciation. Depreciation on property, plant and equipment is calculated on the straight-line basis over the estimated useful lives of the assets. Leasehold improvements are depreciated over the shorter of the life of the asset or the remaining term of the lease. We periodically evaluate our property, plant and equipment assets for indications that the carrying amount of an asset may not be recoverable. At December 31, 2024, management reviewed the remaining estimated lives of our long-lived assets and determined that the estimated life of the property, plant and equipment properly reflected the current remaining economic life of the asset.

Intellectual property, net

Intellectual property consists of patent applications contributed to the Company by five founding stockholders and patent applications for technology developed by the Company. The useful life of this intellectual property has been determined to be ten years and the assets are being amortized straight-line over this period. The Company periodically evaluates its intangible and other long-lived assets for indications that the carrying amount of an asset may not be recoverable. In reviewing for impairment, the Company compares the carrying value of such assets to the estimated undiscounted future cash flows expected from the use of the assets and their eventual disposition. When the estimated undiscounted future cash flows are less than their carrying amount, an impairment loss is recognized equal to the difference between the assets' fair value and their carrying value. In addition to the recoverability assessment, the Company routinely reviews the remaining estimated lives of its long-lived assets. Any reduction in the useful life assumption will result in increased depreciation and amortization expense in the period when such determination is made, as well as in subsequent periods. The Company evaluates the need to record impairment during each reporting period. As of December 31, 2024 and 2023, the Company determined that the estimated life of the intellectual property properly reflected the current remaining economic life of the asset.

Leases

The Company determines if an arrangement is a lease at inception. Operating lease right-of-use assets ("ROU assets") and short-term and long-term lease liabilities are included in the consolidated balance sheets. ROU assets represent the right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating and finance lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the commencement date in determining the present value of lease payments. The Company's lease terms may include options to extend or terminate the lease. Lease expense for operating lease payments is recognized on a straight-line basis over the lease term. For lease agreements with terms less than 12 months, the Company has elected the short-term lease measurement and recognition exemption, and the Company recognizes such lease payments on a straight-line basis over the lease term.

Research and development

The Company conducts research and development activities, primarily focusing on refining recycling processes to increase yield and purity of recovered materials. This entails experimenting with different techniques, equipment, and operational parameters to enhance efficiency. All research and development expenditures are expensed as incurred.

Income taxes

The Company accounts for income taxes in accordance with the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred assets and liabilities are recognized based upon anticipated future tax consequences attributable to differences between financial statement carrying amounts of assets and liabilities and their respective tax bases. The provision for income taxes is comprised of the current tax liability and the changes in deferred tax assets and liabilities. The Company establishes a valuation allowance to the extent that it is more-likely-than-not that deferred tax assets will not be recoverable against future taxable income.

The Company recognizes the effect of uncertain income tax positions only if those positions are more-likely-than-not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

Fair value measurements

The carrying amounts of cash and cash equivalents, accounts receivable, inventory, prepaid expenses and other current assets, accounts payable, and accrued expenses approximate fair value due to the short-term nature of these instruments. The carrying value of short and long-term debt, and lease liabilities also approximates fair value since these instruments bear market rates of interest or are calculated using market rates of interest. None of these instruments are held for trading purposes.

Fair value is defined as an exit price, representing the amount that would be received upon the sale of an asset or payment to transfer a liability in an orderly transaction between market participants. Fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or liability. A three-tier fair value hierarchy is used to prioritize the inputs in measuring fair value as follows:

Level 1. Quoted prices in active markets for identical assets or liabilities.

Level 2. Quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable, either directly or indirectly.

Level 3. Significant unobservable inputs that cannot be corroborated by market data.

The asset or liability's fair value measurement within the fair value hierarchy is based upon the lowest level of any input that is significant to the fair value measurement.

As of December 31, 2024, the Company had a Level 3 warrant liability related to freestanding warrants issued in connection with a private placement transaction that is measured at fair value on a recurring basis. As of December 31, 2023, the Company did not have any assets or liabilities measured at fair value on a recurring basis.

Stock-based compensation

The Company recognizes compensation expense for stock-based compensation in accordance with ASC 718 "Compensation – Stock Compensation." The fair value of restricted stock units ("RSUs") is measured on the grant date based on the closing fair market value of our common stock. The resulting cost is recognized over the period during which an employee is required to provide service in exchange for the awards, usually the vesting period, which is generally three years for RSUs. Stock-based compensation expense is recognized on a straight-line basis, net of actual forfeitures in the period.

The fair value of RSU grants with performance conditions is determined using the closing price of our common stock on date of grant. The calculated compensation cost is adjusted based on an estimate of awards ultimately expected to vest and our assessment of the probable outcome of the performance condition. The fair value of RSU grants with market conditions is calculated on the date of grant using a Monte Carlo simulation model utilizing several key assumptions, including expected share price volatility, the risk-free rate of return, the expected dividend yield and other award design features.

If at any point in time the Company does not currently have a sufficient quantity of shares authorized for issuance under their approved stock incentive plan, the Company has established a sequencing policy that shares are issued to grants with the earliest inception date first. When multiple grants have the same inception date, shares are first allocated to non-named executive officers, then to shares with satisfied market and performance conditions, and last to service-only grants made to named executive officers. Therefore, grants to named executive officers with service-only conditions with the latest grant date will be reclassified to liabilities first. For service-based grants, the value of grants required to be reclassified to liabilities will be re-measured on a periodic basis based on the closing fair market value of our common stock.

Net loss per share

Basic net loss per share is computed by dividing net loss by the weighted average number of vested shares outstanding during the period. Diluted net loss per share is computed by giving effect to all potential dilutive common securities, options and warrants. Potential dilutive common shares include the dilutive effect of the common stock underlying in-the-money stock options and is calculated based on the average share price for each period using the treasury stock method. Under the treasury stock method, the exercise price of an option and the average amount of compensation cost, if any, for future services that the Company has not yet recognized when the option is exercised, are assumed to be used to repurchase shares in the current period.

For all periods presented in this report, unvested restricted stock, stock options and warrants were not included in the computation of diluted net loss per share because such inclusion would have had an antidilutive effect.

	Year Ended December 31,	
Excluded potentially dilutive weighted average securities (1):	2024	2023
Options to purchase common stock	—	19,535
Unvested restricted stock	554,691	373,582
Financing warrants to purchase common stock	673,885	12,602
Total potential dilutive weighted average securities	1,228,576	405,719

(1) Securities are presented on a weighted average outstanding calculation as required if the securities were dilutive and adjusted to give effect to the November 4, 2024 reverse stock split.

Segment and geographic information

Our chief operating decision maker ("CODM") is the Chief Executive Officer. Operating segments are defined as components of an enterprise engaging in business activities for which discrete financial information is available and regularly reviewed by the CODM in deciding how to allocate resources and in assessing performance. The CODM views its operations and manages its business in one operating segment. For further discussion related to segment reporting, please refer to Note 18 - Segment reporting.

Concentration of credit risk

The Company did not have a trade receivable balance as of December 31, 2024 and December 31, 2023, respectively. The Company generated revenue of $25,000 for the year ended December 31, 2023, from the sale of lead finished goods to P. Kay Metals. Revenue from P. Kay Metals represented 100% of total revenue for the year ended December 31, 2023.

Recent accounting pronouncements

Recent accounting pronouncements adopted

In November 2023, the Financial Accounting Standards Board ("FASB") issued ASU No. 2023-07, Improvements to Reportable Segment Disclosures (Topic 280). This ASU updates reportable segment disclosure requirements by requiring disclosures of significant reportable segment expenses that are regularly provided to the Chief Operating Decision Maker ("CODM") and included within each reported measure of a segment's profit or loss. This ASU also requires disclosure of the title and position of the individual identified as the CODM and an explanation of how the CODM uses the reported measures of a segment's profit or loss in assessing segment performance and deciding how to allocate resources. The Company retrospectively adopted this guidance during the year ended December 31, 2024. The adoption did not have a significant impact on the consolidated financial statements.

Recently issued accounting pronouncements not yet adopted

In November 2024, the FASB issued ASU 2024-03, Income Statement—Reporting Comprehensive Income—Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses, which introduced new guidance on disclosures of specified information about certain costs and expenses included within expenses presented on the face or the income statements, such as purchases of inventory and employee compensation. This guidance is effective for the Company for annual reporting periods beginning January 1, 2027 and interim reporting periods beginning January 1, 2028. The Company is currently evaluating the impact that the adoption of this pronouncement will have on the Company's consolidated financial statements and disclosures.

In December 2023, the FASB issued ASU No. 2023-09, Improvements to Income Tax Disclosures (Topic 740). The ASU requires disaggregated information about a reporting entity's effective tax rate reconciliation as well as additional information on income taxes paid. The ASU is effective on a prospective basis for annual periods beginning after December 15, 2024. Early adoption is also permitted for annual financial statements that have not yet been issued or made available for issuance. This ASU will result in the required additional disclosures being included in our consolidated financial statements, once adopted.

3. Revenue recognition

The Company has historically generated revenues by recycling lead acid batteries (“LABs”) and selling the recovered lead to its customers.

The Company was not in commercial production in 2024 or 2023. The nominal revenue generated during the year ended December 31, 2023 resulted from the sale of from the sale of lead finished goods that were generated during operation of the TRIC facility prior to the November 2019 fire at our TRIC facility. Revenue from products transferred to customers at a single point in time with the delivery of the Company’s products to customers accounted for 100% of our revenue during the year ended December 31, 2023.

4. Inventory

Inventory consisted of the following (in thousands):

	December 31, 2024	December 31, 2023
Work in process	$ —	$ 135
Raw materials	251	794
Total inventory	$ 251	$ 929

We write-down inventory when evidence exists that the net realizable value of inventory is less than the cost. During the twelve months ended December 31, 2024, we recorded write-downs of $283,000 which were included in plant operations in the condensed consolidated statement of operations.

5. Property, plant and equipment, net

Property, plant and equipment, net, consisted of the following (in thousands):

Asset Class	Useful Life (Years)	December 31, 2024	December 31, 2023
Operational equipment	3 - 10	$ 3,551	$ 3,581
Lab equipment	5	1,128	817
Computer equipment	3	107	89
Office furniture and equipment	3	87	90
Leasehold improvements	2.5	80	80
Land	-	1,141	1,141
Building	39	3,131	3,131
Equipment under construction		9,726	3,047
		18,951	11,976
Less: accumulated depreciation		(2,478)	(1,629)
Property, plant and equipment, net		$ 16,473	$ 10,347

Property, plant and equipment depreciation expense was $0.9 million and $0.9 million for the years ended December 31, 2024 and December 31, 2023, respectively. Equipment under construction is comprised of our lithium-ion battery recycling commercial equipment along with various components being manufactured or installed by the Company.

In 2024, management shifted its strategic focus to prioritizing lithium carbonate production alongside mixed hydroxide precipitate. This decision aimed to reduce capital and operational intensity while enabling a larger-scale facility with higher revenue and improved margins than the previous design. As a result of this strategic shift, at December 31, 2024 the Company recognized an impairment of approximately $2,640,000 related to vendor equipment deposits for equipment that was initially required for Phase One of the recycling campus at TRIC but is no longer needed under the revised plan. The $2,640,000 write-down of vendor equipment deposits was recognized as an impairment expense and is included under “Impairment expense” in the Consolidated Statement of Operations for the year ended December 31, 2024. The fair value of the impaired assets was determined based on management’s assessment of recoverability, as the equipment was no longer needed.

During 2023, management had shifted focus away from the original service under the ACME lead recycling license agreement to a new primary focus on the Lithium recycling business as a Company. As a result, management sees a decrease in the utilization of the ACME plant and its related operations, and assessed that the future expected cash flows connected with ACME are at or near zero. Therefore, at December 31, 2023, we recognized an impairment of approximately $3,451,000 to equipment under construction that was not yet capitalized related to the ACME CIP as a result of the suspension of the development of recycling operations at the ACME Metals Taiwanese facility.

6. Intellectual property, net

Intellectual property, net, is comprised of the following (in thousands):

	2024	2023
Intellectual property	$ 1,794	$ 1,794
Accumulated amortization	(1,648)	(1,513)
Intellectual property, net	$ 146	$ 281

Amortization expense was $135,000 and $180,000 for the years ended December 31, 2024 and December 31, 2023, respectively.

Estimated future amortization is as follows as of December 31, 2024 (in thousands):

2025	$ 70
2026	51
2027	25
Total estimated future amortization	$ 146

7. Note receivable

During the year ended December 31,2023, the Company sold its stock in LINICO and recorded an impairment of $1,400,000 and a receivable of $600,000. The proceeds were to be received over a 12 month installment starting in January 2024. As of December 31, 2024, the Company's note receivable balance was $100,000. On December 19, 2024 the Company entered in an agreement with LINICO to receive the balance on March 31, 2025.

Comstock Inc., a Nevada corporation (NYSE-MKT: LODE), is the beneficial owner of approximately 88% of the common shares of LINICO. The Company's Chief Financial Officer, Judd Merrill, was a member of the board of directors of Comstock Inc. until April 5, 2023.

8. Other assets

Other assets consist of the following (in thousands):

	December 31,	
	2024	2023
Nevada facilities Right of Use Assets (1)	$ 542	$ 222
Equipment deposits (2)	4,540	4,291
Other assets	20	160
Total other assets, non-current	$ 5,102	$ 4,673

(1) See Footnote 10.

(2) Deposits for equipment to be acquired and utilized at the Company's Phase One build-out of our recycling campus at TRIC.

9. Accrued liabilities

Accrued liabilities consist of the following (in thousands):

	December 31,	
	2024	2023
Property, plant and equipment related	$ 560	$ 1,857
Payroll related	1,576	506
Professional services	884	26
Other	110	78
Total accrued liabilities	$ 3,130	$ 2,467

10. Leases

As of December 31, 2024, the Company maintained two operating leases for real estate. The Company's operating leases have terms of 36 and 37 months and include one or more options to extend the duration of the agreements. These operating leases are included in "Other assets" on the Company's December 31, 2024 and 2023 consolidated balance sheets and represent the Company's right to use the underlying assets for the term of the leases. The Company's obligation to make lease payments are included in "Lease liability, current portion" and "Lease liability, non-current portion" on the Company's December 31, 2024 and 2023 consolidated balance sheets.

On March 14, 2024, the Company extended its operating lease for its headquarters located at 5370 Kietzke Lane, Reno, NV. The lease extension was determined to be a lease modification that qualified as a change of accounting on the existing lease and not a separate contract. As such, the Right-of-Use ("ROU") assets and operating lease liabilities were remeasured using an incremental borrowing rate at the date of modification of 9.61%, which resulted in an increase of the ROU asset of $170,000 and an increase in the operating lease liabilities of $166,000.

On June 9, 2024, the Company extended its operating lease for its Innovation Center located at 160 Denmark Dr, McCarran, NV. The lease extension was determined to be a lease modification that qualified as a change of accounting on the existing lease and not a separate contract. As such, the Right-of-Use ("ROU") assets and operating lease liabilities were remeasured using an incremental borrowing rate at the date of modification of 9.52%, which resulted in an increase of the ROU asset of $347,000 and an increase in the operating lease liabilities of $324,000.

Based on the present value of the lease payments for the remaining lease term of the Company's existing operating leases, as of December 31, 2024, total right-of-use assets were approximately $542,000 and operating lease liabilities were approximately $552,000. As of December 31, 2023, total right-of-use assets were approximately $222,000 and operating lease liabilities were approximately $231,000. For its real estate leases, the Company has elected the practical expedient to not separate a lease into lease and nonlease components.

The Company currently maintains one finance lease for equipment. On April 1, 2024 the Company entered into a finance lease for laboratory equipment which expires in 2029. In November 2021, the Company entered into a finance lease for a modular laboratory which expired in October 2024. The Company's obligation to make finance lease payments are included in "Lease liability, current portion" and "Lease liability, non-current portion" on the Company's December 31, 2024 and 2023 consolidated balance sheets.

Information related to the Company's right-of-use assets and related lease liabilities were as follows (in thousands):

	Twelve Months Ended December 31, 2024	Twelve Months Ended December 31, 2023
Cash paid for operating lease liabilities	$ 275	$ 266
Operating lease cost	$ 282	$ 262
Cash paid for finance lease liabilities	$ 81	$ 59
Interest expense	$ 8	$ 6

	December 31, 2024	December 31, 2023
Weighted-average remaining lease term (years) - operating leases	2.1	0.9
Weighted-average discount rate - operating leases	10.49%	6.18%
Weighted-average remaining lease term (years) - finance lease	4.3	0.8
Weighted-average discount rate - finance lease	4.85%	8.17%

Maturities of lease liabilities as of December 31, 2024 were as follows (in thousands):

Due in 12-month period ended December 31,

	Operating Leases	Finance Leases
2025	$ 291	$ 47
2026	182	47
2027	149	47
2028	—	48
2029	—	12
	$ 622	$ 201
Less imputed interest	(70)	(18)
Total lease liabilities	$ 552	$ 183
Current lease liabilities	$ 249	$ 40
Non-current lease liabilities	303	143
Total lease liabilities	$ 552	$ 183

11. Notes payable

On February 1, 2023, Aqua Metals Reno, Inc., our wholly-owned subsidiary, entered into a Loan Agreement with Summit Investment Services, LLC, a Nevada limited liability company (the “Lender”), pursuant to which the Lender provided us with a loan in the amount of $3,000,000. The loan proceeds were used to purchase a building located at 2999 Waltham Way McCarran, NV 89434 (the “Building”). The loan accrues interest at a fixed annual rate of 9.50%. Interest-only payments are due monthly for the first twenty-four months and the principal and all unpaid interest is due on February 1, 2025. During 2025 we extended the existing maturity date to April 27, 2025. We have the right to prepay the loan at any time, provided that we must pay guaranteed minimum interest of $213,750 (9-months of interest). The Loan Agreement includes representations, warranties, and affirmative and negative covenants that are customary of institutional loan agreements. As of December 31, 2024, the Company was in compliance with all of the covenants. The loan is collateralized by a first priority lien on the building and site improvements, and is guaranteed by Aqua Metals, Inc. During February 2025, Eric Gangloff, founder and CEO of Summit Investment Services, LLC was appointed as a member of the Board of Directors of the Company.

On December 18, 2024, Aqua Metals, Inc. (“Aqua Metals” or the “Company”) entered into a Securities Purchase Agreement with eight accredited investors, including executives and related parties of the Company, in connection with a private placement of secured promissory notes (“Notes”) in the aggregate principal amount of $1,500,000 and common stock purchase warrants (“Warrants") to purchase 750,000 shares of the Company’s common stock. The Securities Purchase Agreement includes customary representations, warranties, and covenants by the investors and the Company. Certain officers and directors of the Company purchased Notes in the aggregate amount of $850,000. The Notes accrue interest at the rate of 20% per annum, subject to a payment of a minimum of 12 months interest in the event of prepayment. The entire principal amount evidenced by the Notes plus all accrued and unpaid interest is due on December 31, 2025. We have the right to prepay the loan at any time. Additionally, upon the occurrence of an event of default, the note holders may declare the Notes to be forthwith due and payable, whereupon the principal and all accrued and unpaid interest thereon, plus all costs of enforcement and collection (including court costs and reasonable attorney’s fees), shall immediately become and be forthwith due and payable. The Company’s obligations under the Notes are secured by a first lien on the Company’s strategic metal inventory and a second lien on all other assets of the Company. Each Note purchaser received a Warrant to purchase share of the Company’s common stock in an amount equal to the principal amount of the investor’s Note divided by two, for a total of 750,000 shares of common stock. The Warrants are exercisable over a five-year period at an exercise price of $1.92 and $1.93 per share and are convertible to shares of common stock of the Company upon a change in control of the Company. The private placement closed on December 19, 2024 for the gross proceeds of $1,500,000. Proceeds from the transaction were first allocated to the warrants and then to the notes on a residual basis resulting in $986,000 allocated to liability-classified warrants and $514,000 to the notes, creating a discount on the notes. Any subsequent changes to the fair value of the Warrant Liability will be recorded in current period earnings. The Company incurred issuance costs of $58,000, which were proportionally allocated between the notes and warrants. Costs related to the warrants were immediately expensed, while costs associated with the notes were included in the note discount and are amortized as interest expense over the loan term. As of December 31, 2024, the outstanding principal balance on the secured notes was $1,500,000, with accrued interest of $10,000. The notes payable are presented net of discount, and the amortization of the discount is recorded as interest expense in the Company’s consolidated financial statements.

Notes payable is comprised of the following (in thousands):

	December 31, 2024	December 31, 2023
Notes payable, current portion		
Summit Investment Services, LLC	$ 3,000	$ 35
Notes related-party	850	—
Notes related-party, accrued interest payable	6	—
Notes	650	—
Notes accrued interest payable	4	—
Less issuance costs	(974)	—
Total notes payable, current portion	$ 3,536	$ 35
Notes payable, non-current portion		
Summit Investment Services, LLC	$ —	$ 3,000
Less issuance costs	—	(77)
Total notes payable, non-current portion	$ —	$ 2,923

12. Warrant liability

The Company accounted for the warrants issued in connection with the Securities Purchase Agreement on Note 11, to purchase 750,000 shares in accordance with the guidance contained in ASC Topic 815 "Derivatives and Hedging". These warrants contain provisions—such as a mandatory conversion feature upon a change in control—that preclude equity classification were recorded as a liability. Accordingly, the Company classified the warrants as a liability at fair value and adjusts them to fair value at each reporting period. This liability is re-measured at each balance sheet date until the warrants are exercised or expire, and any change in fair value will be recognized in the Company's statement of operations. The fair value of the warrants was estimated using the Monte-Carlo option pricing model to determine the fair value of its liability-classified warrants. These instruments are classified within Level 3 of the fair value hierarchy due to the use of unobservable inputs. Key assumptions used in the valuation as of December 19, 2024 and December 31, 2024, included:

	As of December 19, 2024	As of December 31, 2024
Expected life of the options to convert	5	4.97
Risk-free rate	4.34%	4.29%
Historical volatility	99.13%	96.71%
Valuation date stock price	1.75	2.52
Strike price	$1.93/$1.92	$1.93/$1.92
Probability of completing a change in control	30%	20%
Volatility if change in control occurs	100%	100%
Dividend yield	0%	0%

The following table provides a rollforward of the Level 3 warrant liability for the year ended December 31, 2024 (in thousands):

	Warrant liability
Fair value as of January 1, 2024	$ —
Initial measurement on December 19, 2024	986
Change in fair value of warrant liabilities	507
Fair value as of December 31, 2024	$ 1,493

The warrant liability was initially recorded at a fair value of $986,000 and subsequently remeasured to $1,493,000 as of December 31, 2024. The change in fair value of $507,000 was recognized as a non-cash expense in the statement of operations for the year ended December 31, 2024.

13. Stockholders' equity

Effective November 5, 2024, the Company effected a one-for-20 reverse stock split of its issued and outstanding common shares. Accordingly, all common share, stock option, per common share and warrant amounts for all periods presented in the consolidated financial statements and notes thereto have been adjusted retrospectively to reflect this reverse stock split.

Authorized capital

The authorized capital stock of the Company consists of 300,000,000 shares of common stock, par value $0.001 per share. In the event of liquidation of the Company, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities. The common stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. The outstanding shares of common stock are fully paid and non-assessable.

The holders of the Company's common stock are entitled to one vote per share. Holders of common stock are entitled to receive a ratable share of dividends, if any, as may be declared by the board of directors.

Other shares issued

During the year ended December 31, 2023, the Company issued 73,141 shares of common stock upon vesting of Restricted Stock Units ("RSUs") granted by the Company to management and employees, including 25,532 of reissued treasury stock. We withheld 46,960 shares to satisfy approximately $1,092,000 of employees' tax obligations. We treat shares of common stock withheld for tax purposes on behalf of our employees in connection with the vesting of RSUs in a similar manner as common stock repurchases and reported as treasury stock.

During the year ended December 31, 2023, the Company issued 8,534 shares of common stock upon vesting of RSUs granted to Board members.

During the year ended December 31, 2023, the Company issued 5,212 shares of common stock to a Board member related to director fees and other director incentives.

During the year ended December 31, 2023, the Company issued 789 shares of common stock to a former Board member to fulfill obligations related to consulting services.

During the year ended December 31, 2023, the Company issued 162,215 shares of common stock pursuant to the At The Market Issuance Sales Agreement for net proceeds of $3,786,000.

During the year ended December 31, 2023, the Company issued 9,635 shares of common stock pursuant to the employee stock purchase plan.

During the year ended December 31, 2023, the Company issued 23,468 shares of common stock upon the settlement of the securities class action lawsuit.

In July 2023, the Company completed a public offering of 909,650 shares of its common stock, for net proceeds of $18,318,000.

In August 2023, the Company issued 227,273 shares of its common stock pursuant to that certain Securities Purchase Agreement (the "Yulho SPA"), with Yulho Co, Ltd., for net proceeds of approximately $4,629,000.

During the year ended December 31, 2024, the Company issued 78,564 shares of common stock upon vesting of Restricted Stock Units ("RSUs") granted by the Company to management and employees, including 44,261 of reissued treasury stock. We withheld 52,252 shares to satisfy approximately $552,000 of employees' tax obligations. We treat shares of common stock withheld for tax purposes on behalf of our employees in connection with the vesting of RSUs in a similar manner as common stock repurchases and reported as treasury stock.

During the year ended December 31, 2024, the Company issued 20,111 shares of common stock for consulting services.

During the year ended December 31, 2024, the Company issued 10,680 shares of common stock upon vesting of RSUs granted to Board members.

During the year ended December 31, 2024, the Company issued 9,428 shares of common stock to a Board member related to director fees.

During the year ended December 31, 2024, the Company issued 6,607 shares of common stock to a former employee related to a severance agreement.

During the year ended December 31, 2024, the Company issued 10,635 shares of common stock pursuant to the employee stock purchase plan.

During the year ended December 31, 2024, the Company issued 1,195,034 shares of common stock pursuant to the At The Market Issuance Sales Agreement for net proceeds of $5,014,000.

In May 2024, the Company completed a public offering of 1,006,250 shares of its common stock at the public offering price of $7.80 per share. In connection with the sale of common stock, the Company issued warrants to purchase shares of common stock at the rate of one warrant for every share of purchased common stock, at the offering price of $0.20 per warrant. After the deduction of the underwriter's discount and expenses payable by us, we received net proceeds of $7,306,000. The Company used the relative fair value method to allocate the net proceeds of approximately $7,306,000 between the common stock and the warrants. As presented below, the Company recorded the fair value of the warrants of $3,081,000 and common stock of $4,225,000.

Warrants outstanding

In July 2023, the Company issued a warrants to purchase 18,193 shares of the Company's common stock to the underwriter of the Company's public offering, equal to 2% of the 909,650 shares sold. The warrants are exercisable at $27.50 per share, commencing six months after July 17, 2023. The warrants have an expiration date of 5 years from the date of issuance and will expire on July 17, 2028. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $388,000 with the assumptions as follows: $30.80 per share fair value on the date of issuance; 5-year term; 81.9% volatility; 3.81% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In August 2023, the Company issued a warrant to purchase 10,288 shares of the Company's common stock to the underwriter of the transaction in connection with the Yulho SPA. The warrants have an expiration date of 5 years from the date of issuance and are exercisable immediately at $25 per share. The warrant will expire on August 4, 2028. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $181,000 with the assumptions as follows: $25.40 per share fair value on the date of issuance; 5-year term; 82.3% volatility; 3.81% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In May 2024, the Company issued a warrant to purchase 39,125 shares of the Company's common stock to the underwriter of the Company's public offering, equal to 2% of the shares and the number of shares underlying the warrants sold in the offering. The warrants have an expiration date of 5 years from the date of issuance and are exercisable immediately at $9.75 per share. The warrant will expire on May 14, 2029. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $245,000 with the assumptions as follows: $9.42 per share fair value on the date of issuance; 5-year term; 80.3% volatility; 4.46% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In May 2024, in conjunction with the Company's public offering, the Company issued a warrant to purchase 1,006,250 shares of the Company's common stock. The warrants have an expiration date of 5 years from the date of issuance and are exercisable immediately at $7.80 per share. The warrant will expire on May 14, 2029. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $6,666,000 with the assumptions as follows: $9.42 per share fair value on the date of issuance; 5-year term; 80.3% volatility; 4.46% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In December 2024, the Company issued warrants to purchase 750,000 shares of the Company's common stock to the eight accredited investors, including executives and related parties of the Company, in connection with the private placement of secured promissory notes. The warrants are exercisable over a five-year period at an exercise price of $1.92 and $1.93 per share and are convertible to shares of common stock of the Company upon a change in control of the Company. The warrant will expire on December 19, 2029.
See further discussion of the December 2024 warrants within Note 12.

Warrants outstanding to purchase shares of the Company’s common stock at a weighted average exercise price per share are as follows:

Exercise Price per Share		Expiration Date	Shares Subject to Purchase at December 31, 2024
$	27.50	07/17/2028	18,193
$	25.00	08/04/2028	10,288
$	9.75	05/14/2029	39,125
$	7.80	05/14/2029	1,006,250
$	1.93	12/19/2029	425,000
$	1.92	12/19/2029	325,000

Stock-based compensation

2014 Stock Incentive Plan

In 2014, the Board of Directors adopted the Company’s stock incentive plan (the “2014 Plan”). The 2014 Plan expired in September 2024.

2019 Stock Incentive Plan

In 2019, the Board of Directors adopted the Company’s stock incentive plan (the “2019 Plan”). The 2019 Plan was most recently amended and restated effective as of the Company’s 2024 Annual Stockholders’ Meeting. A total of 1,400,000 shares of common stock was authorized for issuance pursuant to the 2019 Plan. The 2019 Plan provides for the following types of stock-based awards: incentive stock options; non-statutory stock options; restricted stock; and performance stock. The 2019 Plan, under which equity incentives may be granted to employees and directors under incentive and non-statutory agreements, requires that the option price may not be less than the fair value of the stock at the date the option is granted. Option awards are exercisable until their expiration, which may not exceed 10 years from the grant date. The restricted shares that are issued from the 2019 Plan normally vest in six equal tranches over three years.

As of December 31, 2024, the Company granted 1,133,687 shares, all of which are subject to future vesting conditions under the 2019 plan which exceeds the 821,837 shares available for issuance. The Company has established a sequencing policy such that grants with the latest grant date will be reclassified to liabilities first. Considering this policy and the terms of the underlying grants, this Company has reclassified 311,850 of their service-based RSUs to liabilities as of December 31, 2024.

Stock-based compensation expense recorded was allocated as follows (in thousands):

	Year ended December 31,			
	2024		2023	
Cost of product sales	$	217	$	130
Research and development cost		48		57
General and administrative expense		2,472		2,347
Total	$	2,737	$	2,534

The following table summarizes the stock-based compensation plan activity and related information through December 31, 2024.

		Options Outstanding		PSUs Outstanding		RSUs Outstanding	
	Number of Shares Available for Grant	Number of Shares	Weighted-Average Exercise Price Per Share	Number of PSUs	Weighted-Average Grant Date Fair Value Per Share	Number of RSUs	Weighted-Average Grant Date Fair Value Per Share
Balance at December 31, 2022	263,113	49,713	$ 88.00	—	$ —	319,397	$ 18.20
Granted	(255,542)	—	—	23,764	11.25	231,778	17.00
Released	—	—	—	—	—	(133,846)	19.80
Forfeited	16,081	(49,713)	88.00	—	—	(8,368)	18.40
Returned to Plan	47,371	—	—	—	—	—	—
Balance at December 31, 2023	71,023	—	—	23,764	11.25	408,961	17.20
Granted	(987,488)	—	—	158,817	2.15	828,671	1.48
Released	—	—	—	—	—	(177,641)	16.54
Forfeited	188,294	—	—	(2,400)	11.25	(185,894)	7.16
Returned to Plan	52,251	—	—	—	—	—	—
Addition to 2019 Plan	475,000	—	—	—	—	—	—
Expiration of 2014 Plan	(31,521)	—	—	—	—	—	—
Balance at December 31, 2024	(232,441)	—	—	180,181	$ 3.23	874,097	$ 3.29

There were no option exercises during the year ended December 31, 2024 and December 31, 2023, respectively. There were no outstanding stock options as of December 31, 2024.

As of December 31, 2024, there is approximately $3,830,000 of total unrecognized compensation cost related to the unvested share-based (option and RSU) compensation arrangements granted under the stock-based compensation plans. The remaining unrecognized compensation cost will be recognized over a weighted-average period of 2.2 years.

Our policy is to fulfill the required shares for a restricted share vesting by first depleting any available Treasury Stock held by the Company and the remaining outstanding balance is satisfied with unissued shares.

Stock Price Hurdle Awards

In 2023, the Company granted stock price hurdle restricted share units as a result of the pilot plant commissioning. The stock price hurdle restricted share units expire three years from the date of grant and vest based on the Corporation's common stock achieving an absolute stock price hurdles based on a 5-day VWAP at any time over the three-year term.

In 2024, the Company granted stock price hurdle restricted share units as part of the long-term incentive bonus. The stock price hurdle restricted share units expire three years from the date of grant and vest based on the Corporation's common stock achieving an absolute stock price hurdles based for 5 consecutive days closing prices at any time over the three-year term.

The following is a summary of the changes in outstanding stock price hurdle awards share units for 2024:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at January 1, 2024	23,764	$ 11.25
Granted	79,408	1.36
Forfeited	(2,400)	11.25
Outstanding at December 31, 2024	100,772	$ 3.64

The fair value of stock price hurdle awards were calculated on the date of grant using a Monte Carlo simulation model utilizing several key assumptions, including expected Company share price volatility, the risk-free interest rate, the cost of equity, and other award design features. The following are weighted-average key assumptions for 2024 and 2023 grants.

	2024	2023
Volatility	88.03%	91.40%
Risk-free interest rate	4.26%	4.30%

Total Shareholder Return (TSR) Awards

In 2024, the Company granted TSR restricted share units as part of the long-term incentive bonus. The TSR restricted share units vest based on the Corporation achieving a total shareholder return relative to our Performance Peer Group and expire three years from the date of grant if performance conditions are not met.

The following is a summary of the changes in outstanding TSR awards share units for 2024:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at January 1, 2024	—	$ —
Granted	79,409	2.93
Outstanding at December 31, 2024	79,409	$ 2.93

2023 Restricted stock units

During the first quarter of 2023, the Company granted 3,207 RSUs, all of which were subject to vesting, with a grant date fair value of $70,000 to employees. The shares vest in three equal installments over a three-year period.

During the second quarter of 2023, the Company granted 10,227 RSUs, all of which were subject to vesting, with a grant date fair value of $225,000 to Board Members. The shares vest in four equal installments over a twelve-month period.

During the third quarter of 2023, the Company granted 6,812 RSUs, all of which were subject to vesting, with a grant date fair value of $155,000 to employees. The shares vest in three equal installments over a three-year period.

During the fourth quarter of 2023, the Company granted 200,398 RSUs, all of which were subject to vesting, with a grant date fair value of $3,422,275 to employees. The shares vest in six equal semi-annual installments over a three-year period. In addition, the Company granted 2,631 RSUs, all of which were subject to vesting, with a grant date fair value of $41,513 to employees. The shares vest in three equal installments over a three-year period.

During the fourth quarter of 2023, the Company granted 3,289 RSUs, all of which were subject to vesting, with a grant date fair value of $51,891 to an employee. All shares vest after six-months.

During the fourth quarter of 2023, the Company granted 23,764 stock price hurdle restricted stock units to employees. The stock price hurdle restricted share units expire three years from the date of grant and vest based on the Corporation’s common stock achieving an absolute stock price hurdles based on a 5-day VWAP at any time over the three-year term.

2024 Restricted stock units

During the first quarter of 2024, the Company granted 5,574 RSUs, all of which were subject to vesting, with a grant date fair value of $60,000 to employees. The shares vest in three equal installments over a three-year period.

During the second quarter of 2024, the Company granted 6,248 RSUs, all of which were subject to vesting, with a grant date fair value of $40,000 to employees. The shares vest in three equal installments over a three-year period.

During the third quarter of 2024, the Company granted 18,579 RSUs, all of which were subject to vesting, with a grant date fair value of $83,000 to Board Members. The shares vest in four equal installments with the first installment vesting immediately and the remaining three installments vesting over a nine-month period.

During the third quarter of 2024, the Company granted 20,111 RSUs, all of which were vested immediately, with a fair value of $150,000 for consulting fees.

During the third quarter of 2024, the Company granted 6,607 RSUs, all of which were vested immediately, with a fair value of $28,000 to an employee upon termination of a severance agreement.

During the fourth quarter of 2024, the Company granted 3,968 RSUs, all of which were subject to vesting, with a grant date fair value of $10,000 to employees. The shares vest in three equal installments over a three-year period.

During the fourth quarter of 2024, the Company granted 177,763 RSUs, all of which were subject to vesting, with a grant date fair value of $311,000 to employees. The shares vest in six equal semi-annual installments over a three-year period.

On October 3, 2024, the Company approved a supplemental retention program designed to retain business-critical resources essential to ongoing operations and strategic initiatives. Participation in the program is contingent upon management achieving specified fundraising targets and subject to the continued service of eligible employees. The program established specific funding tranches tied to cumulative fundraising milestones, which must be achieved on or before March 7, 2025. The grant terms included a fixed dollar, variable share, structure with potential settlement valued from $0 to $925,014 dependent upon satisfaction of performance conditions. Once performance conditions are met, the shares to be granted are fixed and subject to an additional six-month service condition. As of December 31, 2024, the Company has not yet recognized any expenses related to this program as the performance conditions were not deemed probable of achievement. In the first quarter of 2025, the first funding tranche was achieved, triggering the issuance of 118,469 RSUs to qualified employees in accordance with the program’s terms. These shares will be granted subject to continued service requirements.

On December 19, 2024, the Company approved a long-term incentive plan for its Named Executive Officers (NEOs), consisting of 474,454 time-vested RSUs and 158,817 performance stock units (PSUs) with market-based goals. RSUs will continue to vest in equal semi-annual installments over a three-year period, subject to continuation of service, 50% of PSUs granted in 2024 will vest based on total shareholder return (TSR) attainment relative to our Performance Peer Group and 50% based on hitting certain stock price hurdles within 3-years. TSR shares issued vest one third annually. The number of shares issued each year is based on where the Company compares with a peer group such that 50% of shares vest at the 25th percentile, 100% of shares vest at the at 50th percentile, and 200% of shares vest at 75th percentile.

Total intrinsic value of RSUs vested and released during 2024 was $1,462,000. Intrinsic value of RSUs outstanding at December 31, 2024 was $3,830,000.

Reserved shares

At December 31, 2024, the Company has reserved shares of common stock for future issuance as follows:

	Number of Shares
Equity Plan	
Subject to outstanding options and restricted shares	1,133,687
Officer and Director Purchase Plan	237,382
Warrants	1,823,856
2022 Employee Stock Purchase Plan	731,220
Total reserved shares	3,926,145

14. Commitments and contingencies

We may, from time to time, be party to litigation and subject to claims incident to the ordinary course of business. As our growth continues, we may become party to an increasing number of litigation matters and claims. The outcome of litigation and claims cannot be predicted with certainty, and the resolution of any future matters could materially affect our future financial position, results of operations or cash flows. We are not party to any legal proceedings that, if determined adversely to us, would individually or taken together have a material adverse effect on our business, results of operations, financial condition or cash flows.

In October 2021, we filed an action against Johnson Controls Fire Protections, LP ("Defendant") relating to its involvement in the November 2019 fire at our TRIC facility (*Aqua Metals, Inc., et. al v. Johnson Controls Fire Protections, LP, Second Judicial District of the State of Nevada CV21-01891*). Our complaint alleges Defendant's liability for a portion of the fire loss based on Defendant's negligence, breach of contract and other causes of action. On March 25, 2025, the Court dismissed our complaint without leave to amend.

The Company evaluated this matter under ASC 450-30 – Gain Contingencies, which requires a gain contingency not be recognized before it is realized or realizable. The Company had not previously recognized any gains related to this matter. Accordingly, this dismissal will not have any impact on our consolidated financial statements.

15. Related party transactions

The Company has adopted a policy that any transactions with directors, officers, beneficial owners of five percent or more of our common shares, any immediate family members of the foregoing or entities of which any of the foregoing are also officers or directors or in which they have a financial interest, will only be on terms consistent with industry standards and approved by a majority of the disinterested directors of our board.

As of December 31, 2024, the Company had two debt arrangements with related parties. For further details on these related party transactions, refer to Note 11 – Notes Payable in the financial statements.

16. Income taxes

Loss before income tax expense consists of the following (in thousands):

	Year ended December 31, 2024	Year ended December 31, 2023
US	$ (24,552)	$ (23,938)
Foreign	—	—
Total	$ (24,552)	$ (23,938)

The components of the provision for income tax expense consist of the following (in thousands):

	Year ended December 31, 2024	Year ended December 31, 2023
Current		
Federal	$ —	$ —
State	3	2
Deferred		
Federal	—	—
State	—	—
Total provision for income taxes	$ 3	$ 2

Reconciliation of the statutory federal income tax rates consist of the following:

	Year ended December 31, 2024	Year ended December 31, 2023
Tax at federal statutory rate	21.00%	21.00%
State tax, net of federal benefit	(0.01)%	(0.01)%
Valuation allowance	(19.81)%	(19.95)%
Disallowed executive compensation	(0.05)%	(1.45)%
Equity compensation	(1.50)%	0.08%
Other	0.36%	0.32%
Provision for taxes	(0.01)%	(0.01)%

The components of deferred tax assets (liabilities) included on the consolidated balance sheets are as follows (in thousands):

	As of December 31, 2024	As of December 31, 2023
Deferred tax assets		
Capitalized start-up costs	$ 2,233	$ 2,538
Credits	577	492
Fixed assets	912	896
Net operating losses	40,380	36,287
Others	2,846	1,891
Total gross deferred tax assets	46,948	42,104
Valuation allowance	(46,928)	(42,057)
Total gross deferred tax assets (net of valuation allowance)	$ 20	$ 47
Deferred tax liabilities		
Patents	$ (20)	$ (47)
Other	—	—
Total gross deferred tax liabilities	(20)	(47)
Net deferred tax assets	$ —	$ —

Based on the available objective evidence at this time, management believes that it is more-likely-than-not that the net deferred tax assets of the Company will not be realized. Accordingly, management has applied a full valuation allowance against net deferred tax assets at both December 31, 2024 and December 31, 2023. The net valuation allowance increased by approximately $4.9 million during the year ended December 31, 2024. The increase in net valuation allowance primarily relates to net operating losses generated during 2024.

As of December 31, 2024, the Company has total net operating loss carryforwards of $190.9 million for federal income tax purposes. Approximately $25.2 million of the federal net operating losses will begin to expire in December 31, 2034, if not utilized. Approximately $165.7 million of the federal net operating losses were generated after December 31, 2017, and thus do not expire. As of December 31, 2024, the Company has state net operating loss carryforwards of $4.1 million, which will begin to expire in December 31, 2034.

Utilization of the Company's net operating loss may be subject to substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. Such an annual limitation could result in the expiration of net operating loss carryforwards prior to utilization.

At December 31, 2024, the Company had research and development credits carryforward of approximately $0.6 million and $0.5 million for Federal and California income tax purposes, respectively. If not utilized, the Federal research and development credits carryforward will begin to expire on December 31, 2034. The California credits can be carried forward indefinitely.

Effective January 1, 2022, the Company is subject to mandatory capitalization of Section 174 research and development expenditures. The capitalized expenditures are subject to amortization over five years for expenses incurred within the U.S. The Company capitalized $3.5 million and $3.6 million during the years ended December 31, 2024 and December 31, 2023, respectively.

The Company's policy is to account for interest and penalties as income tax expense. As of December 31, 2024, the Company had no interest related to unrecognized tax benefits. No amounts of penalties related to unrecognized tax benefits were recognized in the provision for income taxes.

The Company maintains liabilities for uncertain tax positions. These liabilities involve considerable judgement and estimation and are continuously monitored by management based on the best information available, including changes in tax regulations, the outcome of relevant court cases, and other information. The Company recognizes potential accrued interest and penalties related to unrecognized tax benefits as income tax expense. At December 31, 2024, the Company's total amount of unrecognized tax benefit was approximately $0.5 million, none of which will affect the effective tax rate, if recognized. The Company does not expect its unrecognized benefits to change materially over the next twelve months.

The Company files income tax returns with the United States federal government and the State of California. The Company's tax returns for 2021 to 2023 remain open to audit for Federal and California purposes.

17. 401(k) Savings plan

The Company maintains a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code (the "401(k) Plan"). The 401(k) Plan covers all employees who meet defined minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pretax or after tax basis. Beginning in January 2021, the Plan included a maximum of 4% employer matching contributions with immediate vesting. We recognized $210,000 and $180,000 of expenses related to employer contributions for the 401(k) savings plan during the years ended December 31, 2024 and 2023, respectively.

18. Segment reporting

Aqua Metals, Inc. has one operating segment: sustainable metals recycling. The Company's operations are focused on the development and commercialization of AquaRefining technology for the clean and efficient recovery of valuable metals from lead-acid and lithium-ion batteries. The Company's chief operating decision maker ("CODM") is the Chief Executive Officer. The CODM evaluates financial performance at a consolidated, entity-wide level and does not assess operating results by individual business unit or product line. Financial results are reviewed in line with the Company's consolidated financials, and resource allocation decisions are made based on overall Company performance.

The CODM assesses performance for the segment based on net loss, which is reported on the statement of operations as net loss. The measure of segment assets is reported on the balance sheet as total assets. Significant expenses within net loss, include plant operations, research and development cost, impairment expense, loss (gain) on disposal of property, plant and equipment, and general and administrative expenses, which are each separately presented on the Company's Consolidated Statements of Operations.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) *Evaluation of disclosure controls and procedures*.

Our management, with the participation of our chief executive officer and chief financial officer evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based upon that evaluation, our management, including our chief executive officer and chief financial officer, concluded that for the reasons described below our disclosure controls and procedures were effective as of December 31, 2024 in ensuring all material information required to be filed has been made known in a timely manner.

(b) *Changes in internal control over financial reporting.*

There were no changes to our internal control over financial reporting, as defined in Rules 13a-15(f) under the Exchange Act that occurred during the fiscal quarter ended December 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(c) *Management's report on internal controls over financial reporting.*

Our management is responsible for establishing and maintaining adequate internal controls over financial reporting, as defined under Rule 13a-15(f) under the Exchange Act. Our management has assessed the effectiveness of our internal controls over financial reporting as of December 31, 2024 based on the framework established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements. Our management, with the participation of our chief executive officer and chief financial officer assessed the effectiveness of our internal control over financial reporting as of December 31, 2024, and based on that evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2024.

This report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to the rules of the Securities and Exchange Commission that permit us to provide only management's report in this annual report.

Item 9B. Other Information

During the year ended December 31, 2024, no director or officer adopted or terminated (i) any contract, instruction or written plan for the purchase or sale of securities of the Company intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) or (ii) any "non-Rule 10b5-1 trading arrangement" as defined in paragraph (c) of item 408 of Regulation S-K.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Set forth below are the names, ages and positions of our current executive officers and directors:

Name	Age	Position with the Company
Stephen Cotton	58	President and Chief Executive Officer and Director
Vincent L. DiVito (a), (b), (c)	65	Chairman of the Board and Independent Director
Molly Zhang (a), (b), (c)	63	Independent Director
Eric Gangloff	56	Director
Steven K. Henderson (a), (b), (c)	64	Independent Director
Judd Merrill	54	Chief Financial Officer
Benjamin Taecker	43	Chief Engineering and Operations Officer

(a) Member of the Audit Committee of our Board.

(b) Member of the Compensation Committee of our Board.

(c) Member of the Nominating and Corporate Governance Committee of our Board.

Information about Our Executive Officers and Directors

Vincent L. DiVito has served as a member of our Board since May 2015 and has served as our non-executive Chairman of the Board since June 2022. Since April 2010, Mr. DiVito has served as the owner and chief executive officer of Vincent L. DiVito, Inc., a financial and management consulting firm. From January 2008 to April 2010, Mr. DiVito served as president of Lonza America, Inc., a global life sciences chemical business headquartered in Allendale, New Jersey, and also served as chief financial officer and treasurer of Lonza America, Inc. from September 2000 to April 2010. Lonza America, Inc. is part of Lonza Group, whose stock is traded on the Swiss Stock Exchange. From 1990 to September 2000, Mr. DiVito was employed by Algroup Wheaton, a global pharmaceutical and cosmetics packaging company, first as its director of business development and later as its vice president and chief financial officer. Mr. DiVito is a certified public accountant, certified management accountant and holds an MBA in Finance. Mr. DiVito is a National Association of Corporate Directors Board Leadership Fellow. He served on the board of directors and chairman of the audit committee of Entertainment Gaming Asia Inc., a Nasdaq listed gaming company, from October 2005 until its acquisition in July 2017, and also served as a member of the board of directors of Riviera Holdings Corporation, formerly an AMEX listed gaming and resort company, from July 2002 until the consummation of a change in control of the corporation in March 2011.

Mr. DiVito has extensive knowledge of accounting and corporate governance issues from his experience serving on various corporate boards of directors and has extensive operational knowledge as a result of his experience as a senior executive officer of major corporations. As a result of these and other professional experiences, our Board has concluded that Mr. DiVito is qualified to serve as a director.

Stephen Cotton has served as President of the Company since May 2, 2018 and was promoted by the Board of Directors to President and CEO joining the Board as an Executive Director in January, 2019. Steve also served as Chief Commercial Officer of the Company from January 2015 to June, 2017. Previously, Steve co-founded Canara, Inc. (formerly Data Power Monitoring and IntelliBatt) in December 2001 and served as its Chief Executive Officer through the sale of the company to a private equity firm in June 2012, after which he served as Founder and Executive Chairman until April 2014. Canara (now part of CPG Data Center Innovators) is a global provider of stationary battery systems with integrated monitoring systems and cloud-based monitoring services to many of the largest data center operators. Prior to Canara, Steve led a team to commercialize Sendmail (the Worlds' most commonly used Internet email open source software) from free open source to a paid for commercial offering for Internet service providers and cloud offerings requiring mass email volume management including DoubleClick's standardization (acquired by Google). Steve's career began in the early days of voice messaging systems, including Octel Communications (through its $1.1B exit to Lucent Technologies in 1997 and now part of Avaya). From International Product Manager, to Product Manager for Multimedia, Steve then became the top market development person on a staff of 100+ for 2 years running while managing the AT&T Wireless account, then developing new wireless and local exchange carrier markets. His decision to convince AT&T Wireless (and ultimately other operators which followed) to offer voice messaging for free vs. charge, resulted in multi-million dollar sales of Octel equipment to each region. From April 2014 to January 2015 and June 2017 to April 2018, Steve managed his private investments.

Mr. Cotton has extensive managerial, operational and financial experience. As a result of these and other professional experiences, our Board has concluded that Mr. Cotton is qualified to serve as a director.

Molly Zhang (also known as Peifang Zhang) has served as a member of our board since March 2021. Prior to her transition to board services, Ms. Zhang served in various global leadership positions with Orica (ASX: ORI), a global mining services company, from 2011 to 2016, most recently as Vice President of Asset Management from 2015 to 2016. Ms. Zhang also served in various senior leadership positions with Dow Inc. (NYSE: DOW) from 1989 to 2009, most recently as Managing Director, SCG-Dow Group from 2009 to 2011 and as Business Vice President for Dow's Global Technology Licensing and Catalyst business from 2006 to 2009. Ms. Zhang is currently on the boards of Gates Industrial Corporation (NYSE: GTES), and Arch Resources (NYSE: Arch).

Ms. Zhang has extensive international business, operational and financial management experience, as well as services on various corporate boards of directors. As a result of these and other professional experience, our Board has concluded that Ms. Zhang is qualified as a director.

Eric Gangloff has served as a member of our Board since February 2025. Mr. Gangloff is an experienced investor and financial strategist with a background in capital markets, structured finance, and commercial lending. He is the Founder and CEO of Summit Investment Services, LLC, where he leads private commercial lending and investment strategies for growth-stage businesses. Previously, he served as Founder and CEO of Summit Alternative Investments, LLC where he oversaw the acquisition, origination, and portfolio management of over $1B of performing consumer loans. Mr. Gangloff then served as CEO and Chairman of AmeriFirst Home Improvement Finance, LLC, overseeing its national third-party loan servicing and consumer loan originations expansion before its acquisition by the country's largest privately held bank, First National Bank of Omaha, in 2022. Mr. Gangloff holds an MBA and a Master of Management in Manufacturing from Northwestern University's Kellogg School of Management and a Bachelor of Science in Electrical Engineering from Villanova University. He also serves as a Board Trustee for the Economic Development Authority of Western Nevada and as President and Chair of the Board at Sage Ridge School.

Mr. Gangloff brings deep expertise in corporate finance and investment management including relationships with numerous prominent financial institutions such as Goldman Sachs, Deutsche Bank, and First National Bank of Omaha, making him a valuable addition to Aqua Metals' Board as the company advances its clean battery recycling and critical minerals recovery strategy. He holds an MBA and a Master of Management in Manufacturing from Northwestern University's Kellogg School of Management and a Bachelor of Science in Electrical Engineering from Villanova University. He also serves as a Board Trustee for the Economic Development Authority of Western Nevada and as President and Chair of the Board at Sage Ridge School. As a result of these and other professional experience, our Board has concluded that Mr. Gangloff is qualified to serve as a director of our Company..

Steve Henderson has served as a member of our Board since February 2025. Mr. Henderson is an experienced executive and board advisor with over four decades of leadership in automotive, specialty chemicals, and global manufacturing. Mr. Henderson served as Executive Vice President at Leggett & Platt (NYSE: LEG), where he oversaw businesses generating more than half of the company's total revenue and EBITDA. Prior to that, he spent over 30 years at Dow Chemical, including eight years as President of Dow Automotive, where he led strategic investments in battery materials and EV technologies, securing partnerships with Tesla, Ford, and Magna. Mr. Henderson holds an MBA from the University of Notre Dame and a BS in Business Administration from Central Michigan University. He currently serves on the Board of Directors at L&L Products, advising on geographic and end-market expansion.

Steve brings deep expertise in global operations, strategic growth, and commercialization, making him a key addition to Aqua Metals' Board as the company scales its sustainable lithium battery recycling technology. He holds an MBA from the University of Notre Dame and a BS in Business Administration from Central Michigan University. He currently serves on the Board of Directors at L&L Products, advising on geographic and end-market expansion. As a result of these and other professional experience, our Board has concluded that Henderson is qualified to serve as a director of our Company.

Judd Merrill joined Aqua Metals in November 2018 from Klondex Mines Ltd., a Nevada based international mining company where he was Director of Finance/Accounting. Judd was responsible for overseeing the SEC compliance and the management of the Company's $200+ million budget over five subsidiaries. Before its acquisition by Hecla, Klondex was a $500 million dollar company traded on the New York Stock Exchange and the Toronto Stock Exchange. Prior to joining Klondex, Judd spent five years as Chief Financial Officer and Corporate Secretary of Comstock Mining Inc., a publicly traded gold company in Nevada where he was instrumental in establishing financial modeling and analytics. Judd was responsible for implementing procedures that reduced annual administrative costs by 50%, and handled vendor negotiations that conserved funds and managed liquidity. Judd worked directly with bankers, lenders, investment funds and major shareholders to lead the Company's fundraising and capital management activities. Judd also worked as a controller at Fronteer Gold Inc. and as an assistant controller at Newmont Mining Corp., where he developed strong financial planning, treasury and cash management experience in the mining sector. Judd began his career at Deloitte & Touche LLP and spent six years working in broader financial accounting, reporting and internal controls while managing corporate financial activities.

Judd holds a Bachelor of Science in accounting from Central Washington University and a Masters of Business Administration from the University of Nevada, Reno and is a certified public accountant.

Ben Taecker has over 20 years of experience in manufacturing and operations leadership and has been with Aqua Metals since January of 2017. Prior to relocating his family to the Tahoe-Reno area to join Aqua Metals, he spent six years in progressive leadership roles at the Johnson Controls Inc. ("JCI Power Systems Division" now Clarios) Lead Acid Battery Recycling Center in Florence, South Carolina and was a leader in the early planning, construction, commissioning, and scaling of that facility. Ben also led the engineering team to improve battery recycling processes in the new smelter which resulted in a 70% reduction in smelting emissions. Ben was instrumental in delivering a compliant plant for Clarios. He has experience in startups, environmental regulation compliance, process development and operational excellence. Ben has years of design management experience including complex design contracts for the U.S. military. He is highly motivated about being a key part of the new processes used by Aqua Metals to eliminate many of the safety and environmental hazards found at traditional smelters while making the purest lead in the world. Mr. Taecker has a Mechanical Engineering degree from South Dakota State University.

Audit Committee

Our Audit Committee currently consists of consists of Vincent L. DiVito, Steve Henderson and Molly Zhang, with Mr. DiVito serving as Chairperson. The composition of our Audit Committee meets the requirements for independence under current Nasdaq Stock Market listing standards and SEC rules and regulations.

Each member of our Audit Committee meets the financial literacy requirements of the Nasdaq Stock Market listing standards. Mr. DiVito is an audit committee financial expert within the meaning of Item 407(d) of Regulation S-K under the Securities Act of 1933, as amended, or the Securities Act. Pursuant to its charter, our Audit Committee will, among other things:

- select a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- discuss the scope and results of the audit with the independent registered public accounting firm, and review, with management and the independent registered public accounting firm, our interim and year-end operating results;
- develop procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- review our policies on risk assessment and risk management;
- review related-party transactions; and
- approve (or, as permitted, pre-approve) all audit and all permissible non-audit services, other than de minimis non-audit services, to be performed by the independent registered public accounting firm.

Our Audit Committee operates under a written charter that satisfies the applicable rules of the SEC and the listing standards of the Nasdaq Stock Market. During the year ended December 31, 2024, our Audit Committee met four times.

Process for Stockholders to Send Communications to our Board of Directors

Because we have always maintained open channels of communication with our stockholders, we do not have a formal policy that provides a process for stockholders to send communications to our Board. However, if a stockholder would like to send a communication to our Board, please address the letter to the attention of our corporate secretary, Judd Merrill, and it will be distributed to each director.

Code of Conduct

We have adopted a code of conduct for all employees, including the chief executive officer, principal financial officer and principal accounting officer or controller, and/or persons performing similar functions, which is available on our website, under the link entitled “Code of Conduct”.

Insider Trading Policy

We have adopted an Insider Trading Policy governing the purchase, sale, and other dispositions of our securities by our directors, officers, employees and consultants, including those persons serving in similar positions with our subsidiaries. Our Insider Trading Policy is reasonably designed to promote compliance with insider trading laws, rules and regulations, and any listing standards applicable to us and our directors, officers, employees and consultants. A copy of our Insider Trading Policy is filed as an exhibit to this report.

Limitation of Liability of Directors and Indemnification of Directors and Officers

The Delaware General Corporation Law provides that corporations may include a provision in their certificate of incorporation relieving directors of monetary liability for breach of their fiduciary duty as directors, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director’s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payment of a dividend or unlawful stock purchase or redemption, or (iv) for any transaction from which the director derived an improper personal benefit. Our First Amended and Restated Certificate of Incorporation provides that directors are not liable to us or our stockholders for monetary damages for breach of their fiduciary duty as directors to the fullest extent permitted by Delaware law. In addition to the foregoing, our Third Amended and Restated Bylaws provide that we may indemnify directors, officers, employees or agents to the fullest extent permitted by law and we have agreed to provide such indemnification to each of our directors.

The above provisions in our First Amended and Restated Certificate of Incorporation and Third Amended and Restated Bylaws and in the written indemnity agreements may have the effect of reducing the likelihood of derivative litigation against directors and may discourage or deter stockholders or management from bringing a lawsuit against directors for breach of their fiduciary duty, even though such an action, if successful, might otherwise have benefited us and our stockholders. However, we believe that the foregoing provisions are necessary to attract and retain qualified persons as directors.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 11. Executive Compensation

Summary Compensation Table

The following table sets forth the compensation awarded to, earned by or paid to those persons who served as our chief executive officer and our two other highest paid executive officers for the years ended December 31, 2024 and 2023 (in thousands).

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards (1) ($)	All Other Compensation ($)	Total ($)
Stephen Cotton,	2024	511	358	568	23	1,460
President and Chief Executive Officer	2023	488	553	1,405	17	2,463
Judd Merrill,	2024	375	228	244	22	869
Chief Financial Officer	2023	358	304	564	19	1,245
Benjamin Taecker,	2024	300	105	147	20	572
Chief Engineering and Operating Officer	2023	271	154	429	19	873

(1) Amounts shown in this column do not reflect dollar amounts actually received by our named executive officers. Instead, these amounts reflect the aggregate grant date fair value of each restricted common stock award computed in accordance with the provisions of FASB ASC Topic 718 (using the closing price of our common stock on the date of grant). Assumptions used in the calculation of these amounts are included in Note 13, Stockholders' Equity, of our audited consolidated financial statements for the year ended December 31, 2024.

Narrative Disclosure to Summary Compensation Table

Cotton Employment Agreement

Effective as of August 7, 2023, we entered into an amended and restated employment agreement with Mr. Cotton pursuant to which we agreed to pay Mr. Cotton a base salary of $491,400 effective as of March 5, 2023, along with reasonable and customary health insurance and other benefits, at our expense. Mr. Cotton will be eligible to receive short-term and long-term incentive bonuses with a target of 100% and 200% of his base salary, respectively, based on performance criteria approved by the compensation committee of our Board. In addition, the agreement provides Mr. Cotton with severance of two times his annual salary, a prorated bonus for the year of his termination and two years of health benefits in the event we terminate Mr. Cotton without cause or he resigns for good reason; provided, if he is terminated without cause or resigns for good reason within one year following a change of control of our Company, his severance will include two times his annual salary, two times his annual bonus, two years of health benefits and the immediate vesting of all unvested equity awards. The employment agreement provides for intellectual property assignment and confidentiality provisions that are customary in our industry.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 68,250 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Cotton will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Cotton's continuation of service to our Company.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 21,000 RSUs The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: 10,500 RSUs will vest and settle upon achieving $2.50 per share; 5,250 RSUs will vest and settle upon achieving $4.00 per share; and 5,250 RSUs will vest and settle upon achieving $5.00 per share. The RSUs have been granted under the 2019 Plan and will expire on the third anniversary of the date of grant and subject to Mr. Cotton's continuation of service to our Company.

Effective as of December 31, 2023, the Compensation Committee of our Board amended the employment agreement with Mr. Cotton, to increase Mr. Cotton's salary to $511,056 per year.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 271,927 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Cotton will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Cotton's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 45,321 PSUs granted under the 2019 Plan. The PSUs were issued pursuant to a Performance Stock Unit Award Agreement pursuant to which Mr. Cotton will receive one share of our common stock upon settlement of each PSU. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile). The PSU vesting is subject to Mr. Cotton's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 45,321 PSUs granted under the 2019 Plan. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices)within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024. The PSU vesting is subject to Mr. Cotton's continuation of service to our Company.

Merrill Employment Agreement

Effective as of August 7, 2023, we entered into an amended and restated employment agreement with Mr. Merrill pursuant to which we agreed to pay Mr. Merrill a base salary of $360,500 effective as of March 5, 2023, along with reasonable and customary health insurance and other benefits, at our expense. Mr. Merrill will be eligible to receive short-term and long-term incentive bonuses with a target of 75% and 125% of his base salary, respectively, based on performance criteria approved by the compensation committee of our Board. In addition, the agreement provides Mr. Merrill with severance of 18 months of his annual salary, a prorated bonus for the year of his termination and 18 months of health benefits in the event we terminate Mr. Merrill without cause or he resigns for good reason; provided, if he is terminated without cause or resigns for good reason within one year following a change of control of our Company, his severance will include 18 months times of his annual salary, 150% of his annual bonus, 18 months of health benefits and the immediate vesting of unvested equity awards. The employment agreement provides for intellectual property assignment and confidentiality provisions that are customary in our industry.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 31,281 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Merrill will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Merrill's continuation of service to our Company.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 2,500 RSUs The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: 1,250 RSUs will vest and settle upon achieving $2.50 per share; 625 RSUs will vest and settle upon achieving $4.00 per share; and 625 RSUs will vest and settle upon achieving $5.00 per share. The RSUs have been granted under the 2019 Plan and will expire on the third anniversary of the date of grant and subject to Mr. Merrill's continuation of service to our Company.

Effective as of December 31, 2023, the Compensation Committee of our Board amended the employment agreement with Mr. Merrill, to increase Mr. Merrill's salary to $374,775 per year.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 124,633 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Merrill will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Merrill's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 20,772 PSUs granted under the 2019 Plan. The PSUs were issued pursuant to a Performance Stock Unit Award Agreement pursuant to which Mr. Merrill will receive one share of our common stock upon settlement of each PSU. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile). The PSU vesting is subject to Mr. Merrill's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 20,772 PSUs granted under the 2019 Plan. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices)within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024. The PSU vesting is subject to Mr. Merrill's continuation of service to our Company.

Taecker Employment Agreement

In August 2021, we entered executive employment agreement with Mr. Taecker. Pursuant to the employment agreement, we initially agreed to compensate Mr. Taecker at the annual rate of $250,000. Mr. Taecker will be eligible to receive short-term and long-term incentive bonuses of up to 50% and 100% of his base salary, respectively, based on performance criteria approved by the compensation committee of our board of directors. The employment agreement entitles Mr. Taecker to reasonable and customary health insurance and other benefits, at our expense, and severance equal to 150% of his then annual salary and target annual bonus amount in the event of his termination for good reason following a change-in-control of the Company. Effective as of January 2, 2022, the Compensation Committee of our Board amended the employment agreement with Mr. Taecker, to increase Mr. Taecker's salary to $262,500 per year.

Effective as of August 7, 2023, we entered into an amended and restated employment agreement with Mr. Taecker pursuant to which we agreed to pay Mr. Taecker a base salary of $273,000 effective as of March 5, 2023, along with reasonable and customary health insurance and other benefits, at our expense. Mr. Tacker will be eligible to receive short-term and long-term incentive bonuses with a target of 50% and 100% of his base salary, respectively, based on performance criteria approved by the compensation committee of our Board. In addition, the agreement provides Mr. Taecker with severance of 12 months of his annual salary, a prorated bonus for the year of his termination and 12 months of health benefits in the event we terminate Mr, Taecker without cause or he resigns for good reason; provided, if he is terminated without cause or resigns for good reason within one year following a change of control of our Company, his severance will include 18 months times of his annual salary, 150% of his annual bonus, 18 months of he

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 18,958 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Taecker's continuation of service to our Company.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 141 RSUs The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: 71 RSUs will vest and settle upon achieving $2.50 per share; 35 RSUs will vest and settle upon achieving $4.00 per share; and 35 RSUs will vest and settle upon achieving $5.00 per share. The RSUs have been granted under the 2019 Plan and will expire on the third anniversary of the date of grant and subject to Mr. Taecker's continuation of service to our Company.

On December 29, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 6,500 RSUs granted under the 2019 Plan. The RSUs were, issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Taecker's continuation of service to our Company.

Effective as of December 31, 2023, the Compensation Committee of our Board amended the employment agreement with Mr. Taecker, to increase Mr. Taecker's salary to $300,300 per year.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 79,893 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Taecker's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 13,315 PSUs granted under the 2019 Plan. The PSUs were issued pursuant to a Performance Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each PSU. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile). The PSU vesting is subject to Mr. Taecker's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 13,315 PSUs granted under the 2019 Plan. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices) within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024. The PSU vesting is subject to Mr. Taecker's continuation of service to our Company.

Potential Payments upon Termination

As noted above, the employment agreements for Mr. Cotton, Merrill, and Taecker entitle each officer to a severance payment and related benefits in the event of our termination of their employment without cause or their resignation for good reason.

If a qualifying involuntary termination had occurred on December 31, 2024, Mr. Cotton, Merrill, and Taecker would have been eligible to receive the following amounts:

Name	Base Salary ($)	Prorated Annual Bonus ($)	Health Insurance Premiums (1) ($)	Total ($)
Stephen Cotton	1,022	511	51	$ 1,584
Judd Merrill	562	281	42	$ 885
Benjamin Taecker	300	150	24	$ 474

(1) Calculated using the monthly COBRA amount based on health insurance elections at December 31, 2024.

Outstanding Equity Awards at December 31, 2024

	Option Awards				Stock Awards	
Name	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price	Option Expiration Date	Number of Units of Stock that have not vested	Market value of Units of Stock that have not vested
Stephen Cotton					6,020	$ 15,170(1)
					31,765	$ 80,048(2)
					56,880	$ 143,338(3)
					271,927	$ 685,256(4)
					21,000	$ 52,920(5)
					45,321	$ 114,209(6)
					45,321	$ 114,209(7)
Judd Merrill					2,759	$ 6,953(1)
					14,556	$ 36,681(2)
					26,070	$ 65,696(3)
					124,634	$ 314,078(4)
					2,500	$ 6,300(5)
					20,772	$ 52,345(6)
					20,772	$ 52,345(7)
Benjamin Taecker					1,673	$ 4,216(1)
					8,822	$ 22,231(2)
					15,800	$ 39,816(3)
					79,893	$ 201,330(4)
					141	$ 355(5)
					13,315	$ 33,554(6)
					13,315	$ 33,554(7)
					5,418	$ 13,653(8)

(1) These RSUs were awarded on December 13, 2021. The RSUs vest in six equal semi-annual installments over a three-year period.

(2) These RSUs were awarded on December 12, 2022. The RSUs vest in six equal semi-annual installments over a three-year period.

(3) These RSUs were awarded on December 12, 2023. The RSUs vest in six equal semi-annual installments over a three-year period.

(4) These RSUs were awarded on December 19, 2024. The RSUs vest in six equal semi-annual installments over a three-year period.

(5) These PSUs were awarded on December 12, 2023. The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: one half of the RSUs will vest and settle upon achieving $2.50 per share; one quarter of the RSUs will vest and settle upon achieving $4.00 per share; and one quarter of the RSUs will vest and settle upon achieving $5.00 per share.

(6) These PSUs were awarded on December 19, 2024. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points —December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile).

(7) These PSUs were awarded on December 19, 2024. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices) within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024.

(8) These RSUs were awarded on December 29, 2023. The RSUs vest in six equal semi-annual installments over a three-year period.

Pay vs. Performance

The following table sets forth compensation information for our chief executive officer, referred to below as our CEO, and our other named executive officers, or NEOs, for purposes of comparing their compensation to the value of our shareholders' investments and our net income, calculated in accordance with SEC regulations, for fiscal years 2024, 2023 and 2022.

Year	Summary Compensation Table Total for CEO	Compensation Actually Paid to CEO	Average Summary Compensation Table Total for Non-CEO NEOs	Average Compensation Actually Paid to Non-CEO NEOs	Total Shareholder Return	Net Income
	(1)	(2)	(3)	(4)	(5)	
2024	$ 1,460,000	$ 869,740	$ 720,500	$ 737,667	$ 10.24	$ (24,555,000)
2023	$ 2,463,000	$ 1,447,590	$ 1,009,333	$ 725,337	$ 24.92	$ (23,938,000)
2022	$ 1,782,375	$ 2,393,412	$ 782,745	$ 994,189	$ 40.98	$ (15,431,000)

1. The dollar amounts reported are the amounts of total compensation reported for our CEO, Mr. Cotton, in the Summary Compensation Table for fiscal years 2024 and 2023.
2. The dollar amounts reported represent the amount of "compensation actually paid", as computed in accordance with SEC rules. The dollar amounts reported are the amounts of total compensation reported for Mr. Cotton during the applicable year, but also include (i) the year-end value of equity awards granted during the reported year, (ii) the change in the value of equity awards that were unvested at the end of the prior year, measured through the date the awards vested, or through the end of the reported fiscal year, and (iii) value of equity awards issued and vested during the reported fiscal year. See Table below for further information.
3. The dollar amounts reported are the average of the total compensation reported for our NEOs, other than our CEO, namely Mr. Merrill and Mr. Taecker in the Summary Compensation Table for fiscal year 2024. Mr. Merrill and Mr. Taecker, and Mr. McMurtry (Former CBO) were included in 2023 and 2022.
4. The dollar amounts reported represent the average amount of "compensation actually paid", as computed in accordance with SEC rules, for our NEOs, other than our CEO. The dollar amounts reported are the average of the total compensation reported for our NEOs, other than our CEO in the Summary Compensation Table for fiscal years 2023, 2022 and 2021, but also include (i) the year-end value of equity awards granted during the reported year, (ii) the change in the value of equity awards that were unvested at the end of the prior year, measured through the date the awards vested, or through the end of the reported fiscal year, and (iii) value of equity awards issued and vested during the reported fiscal year. See Table below for further information.
5. Reflects the cumulative shareholder return, computed in accordance with SEC rules, as of the end of each fiscal year assuming (i) an investment of $100 in our common shares at a price per share equal to $24.60, the closing price of our common stock on December 31, 2021 and (ii) the valuation of those shares as of the last trading day in 2022, 2023 and 2024 based on the closing prices for our common stock as of the those dates of $25.00, $15.20 and $2.52, respectively.

CEO Equity Award Adjustment Breakout

Year	Summary Compensation Table Total	Grant Date Fair Value of Equity Awards Granted in Fiscal Year	Change in Pension Value	Pension Service Cost and Associated Prior Service Cost	Fair Value at Fiscal Year End of Outstanding and Unvested Equity Awards Granted in the Fiscal Year	Change in Fair Value of Outstanding and Unvested Equity Awards Granted in Prior Fiscal Years	Fair Value at Vesting of Equity Awards Granted and Vested in the Fiscal Year	Change in Fair Value as of the Vesting Date of Equity Awards Granted in Prior Fiscal Years that Vested in the Fiscal Year	Fair Value as of the Prior Fiscal Year End of Equity Awards Granted in Prior Fiscal Years that Failed to Meet Vesting Conditions in the Fiscal Year	Value of Dividends or Other Earnings Paid on Equity Awards Not Otherwise Reflected in Total Compensation	Compensation Actually Paid
					(1)	(2)	(3)	(4)	(5)	(6)	
2024	$ 1,460,000	$ (568,000)	$ 0	$ 0	$ 1,633,561	$ (1,409,158)	$ 0	$ (246,663)	$ 0	$ 0	$ 869,740
2023	$ 2,463,000	$ (1,405,000)	$ 0	$ 0	$ 1,248,224	$ (775,034)	$ 0	$ (83,599)	$ 0	$ 0	$ 1,447,590
2022	$ 1,782,375	$ (825,375)	$ 0	$ 0	$ 1,588,236	$ 31,563	$ 0	$ (183,388)	$ 0	$ 0	$ 2,393,412

(1) Add the fair value as of the end of the covered fiscal year of all awards granted during the covered fiscal year that are outstanding and unvested as of the end of the covered fiscal year;

(2) Add the amount equal to the change as of the end of the covered fiscal year (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year that are outstanding and unvested as of the end of the covered fiscal year;

(3) Add, for awards that are granted and vest in the same year, the fair value as of the vesting date;

(4) Add the amount equal to the change as of the vesting date (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year for which all applicable vesting conditions were satisfied at the end of or during the covered fiscal year;

(5) Subtract, for any awards granted in any prior fiscal year that fail to meet the applicable vesting conditions during the covered fiscal year, the amount equal to the fair value at the end of the prior fiscal year; and

(6) Add the dollar value of any dividends or other earnings paid on stock or option awards in the covered fiscal year prior to the vesting date that are not otherwise included in the total compensation for the covered fiscal year.

Non-CEO NEO Equity Award Adjustment Breakout

Year	Summary Compensation Table Total	(Minus): Grant Date Fair Value of Equity Awards Granted in Fiscal Year	(Minus): Change in Pension Value	Plus: Pension Service Cost and Associated Prior Service Cost	Plus: Fair Value at Fiscal Year End of Outstanding and Unvested Equity Awards Granted in the Fiscal Year	Plus/(Minus): Change in Fair Value of Outstanding and Unvested Equity Awards Granted in Prior Fiscal Years	Plus: Fair Value at Vesting of Equity Awards Granted and Vested in the Fiscal Year	Plus/(Minus): Change in Fair Value as of the Vesting Date of Equity Awards Granted in Prior Fiscal Years that Vested in the Fiscal Year	(Minus): Fair Value as of the Prior Fiscal Year End of Equity Awards Granted in Prior Fiscal Years that Failed to Meet Vesting Conditions in the Fiscal Year	Plus: Value of Dividends or Other Earnings Paid on Equity Awards Not Otherwise Reflected in Total Compensation	Compensation Actually Paid
					(1)	(2)	(3)	(4)	(5)	(6)	
2024	$ 720,500	$ (195,500)	$ 0	$ 0	$ 797,467	$ (489,252)	$ 0	$ (95,548)	$ 0	$ 0	$ 737,667
2023	$ 1,009,333	$ (460,000)	$ 0	$ 0	$ 410,807	$ (222,200)	$ 0	$ (12,603)	$ 0	$ 0	$ 725,337
2022	$ 782,745	$ (277,411)	$ 0	$ 0	$ 519,289	$ 5,846	$ 0	$ (36,278)	$ 0	$ 0	$ 994,189

(1) Add the fair value as of the end of the covered fiscal year of all awards granted during the covered fiscal year that are outstanding and unvested as of the end of the covered fiscal year;

(2) Add the amount equal to the change as of the end of the covered fiscal year (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year that are outstanding and unvested as of the end of the covered fiscal year;

(3) Add, for awards that are granted and vest in the same year, the fair value as of the vesting date;

(4) Add the amount equal to the change as of the vesting date (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year for which all applicable vesting conditions were satisfied at the end of or during the covered fiscal year;

(5) Subtract, for any awards granted in any prior fiscal year that fail to meet the applicable vesting conditions during the covered fiscal year, the amount equal to the fair value at the end of the prior fiscal year; and

(6) Add the dollar value of any dividends or other earnings paid on stock or option awards in the covered fiscal year prior to the vesting date that are not otherwise included in the total compensation for the covered fiscal year.

Relationship between Pay and Performance

"Compensation actually paid" to our CEO decreased from $2,393,412 in 2022 to $1,447,590 in 2023, and subsequently decreased to $869,740 in 2024. Similarly, average “compensation actually paid" to our non-CEO NEOs decreased from $994,189 in 2022 to $725,337 in 2023, and then subsequently increased to $737,667 in 2024. These aforementioned changes in "compensation actually paid" are in line with the changes in our total shareholder return (TSR) as set forth in the above table: our TSR decreased by 39% between 2022 and 2023, and our TSR decreased by 59% between 2023 and 2024. In addition, the changes in "compensation actually paid" are in line with the changes in our net loss: that is, our net loss increased by 55% from $(15,431,000) in 2022 to $(23,938,000) in 2023, and increased by 2% to $(23,996,000) in 2023.

Short-Term Incentive Plan (STIP)

Our Board has approved, and our Compensation Committee employs, an informal Short-Term Incentive Plan, or STIP, in determining compensation for our NEOs. The STIP is focused on delivering the Company’s annual “SMART” objectives approved by the Board. The goals are objective, measurable and rigorous. Each of our NEOs participated in the STIP program. Compensation Committee discussion and feedback on the progress against the annual objectives is done at mid-year and at year-end. The year-end status is the basis for the STIP payout. Full year performance is determined by a rating (range 1 to 5) multiplied by the NEOs target bonus.

Long-Term Incentive Plan (LTIP)

Our Board has also approved, and our Compensation Committee employs, an informal Long-Term Incentive Plan, or LTIP in determining compensation for our NEOs. The LTIP is a long-term (3-year vesting) incentive program focused on improving the value of the Company over time and incentivizing the retention of employees as they benefit from the Company’s growth and value creation. The LTIP is granted based on performance. Restricted stock units (RSUs) that vest over 3-years were granted in December based on Company performance on “SMART” objectives approved by the Board.

Process for Determining Executive Compensation

Use of Peer Group and Benchmarking

Our compensation Peer Group was developed by identifying companies reasonably similar to us in terms of industry profile, business model, and size (market capitalization given our pre-revenue status). Given the limited number of directly comparable U.S. publicly traded sustainable lithium-ion battery recycling companies, our peer group was expanded to include broader recycling, battery manufacturing, battery materials, and patented technology companies. Below is a list of the companies the Compensation Committee approved for inclusion in our Compensation Peer Group with respect to executive officer compensation levels:

374Water, Inc.	CECO Environmental Corp.	ESS Tech, Inc.
American Battery Technology Company	Comstock Inc.	Perma-Fix Environmental Services, Inc.
Aris Water Solutions, Inc.	Dragonfly Energy Holdings Corp.	Quest Resource Holding Corp.
Arteris, Inc.	Energous Corp.	Smith Micro Software, Inc.
Atomera Inc.	Eos Energy Enterprises, Inc.	Telos Corp.

The positions of our named executive officers were compared to similar positions in our compensation Peer Group, and the compensation levels for comparable positions in the Peer Group were reviewed for guidance in determining:

- base salaries;
- target bonus opportunity under our short-term incentive plan; and
- the amount of equity awards under our long-term incentive plan.

The Compensation Committee approves base salaries, STIP awards and LTIP awards on a case-by-case basis for each NEO, taking into account, among other things, individual and Company performance, role expertise and experience and the competitive market, advancement potential, recruiting needs, internal equity, retention requirements, succession planning, and best compensation governance practices. The Compensation Committee does not tie individual compensation to specific target percentiles, but rather reviews the range of market data as one input in informing pay decisions.

Compensation of Directors

We do not compensate any of our executive directors for their service as a director and we have not adopted any policies or plans with regard to the compensation of our independent directors. However, our Board has adopted the following director compensation policy:

- The Chairman will receive an annual fee of $150,000; each director other than the Chairman will receive an annual fee of $90,000; each Committee person other than the Committee Chair will receive an annual fee of $7,500 per Committee position, except for the Audit Committee position who shall be paid $10,000 annually; and each Committee Chair will receive an annual fee of $10,000 per Chair, except for the Chair of the Audit Committee shall be paid $15,000. Director compensation can either be payable in cash or payable in AQMS shares based on an election made by each Board Member. The number of shares to be issued is determined by the total fee divided by the closing spot price of the last trading day of the respective quarter being paid.
- An annual grant of $75,000 worth of restricted stock units to the Chairman, $60,000 worth of restricted stock units to the Audit Committee Chairman and $50,000 worth of restricted stock units to all other independent directors. Each board member is only eligible to be granted one allotment of annual restricted stock units.

The following table sets forth the compensation we paid to our independent directors during the year ended December 31, 2024. In reviewing the table, please note that Edward Smith resigned from our Board in August 2024 and Mr. Yi resigned from the board in May 2024.

Name	Fees Earned or Paid in Cash ($)	Option Awards (1) ($)	Stock Awards (2) ($)	All Other Compensation ($)	Total ($)
Vincent DiVito	$ 188	$ -	$ 40	$ -	$ 228
Molly Zhang	$ 111	$ -	$ 44	$ -	$ 155
Edward Smith	$ 83	$ -	$ 14	$ -	$ 97
Sung Yi	$ -	$ -	$ -	$ -	$ -

(1) The dollar amounts in Option Awards column above reflect the values of options as of the grant date in accordance with ASC 718, *Compensation-Stock Compensation* and, therefore, do not necessarily reflect actual benefits received by the individuals. Assumptions used in the calculation of these amounts are included in Note 13 to our audited consolidated financial statements for the year ended December 31, 2024.

(2) Amounts shown in this column do not reflect dollar amounts actually received by our directors. Instead, these amounts reflect the aggregate grant date fair value of each restricted common stock award computed in accordance with the provisions of FASB ASC Topic 718 (using the closing price of our common stock on the date of grant). Assumptions used in the calculation of these amounts are included in Note 13, Stockholders' Equity, of our audited consolidated financial statements for the year ended December 31, 2024.

Stock Ownership Guidelines

In 2023, the Compensation Committee approved a stock ownership guideline for the board pursuant to which non-employee directors shall not sell shares of the Company's common stock if after such sale the director would hold shares of the Company's common stock having a current market value of less than three times the director's annual base cash board fee.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The following table sets forth certain information regarding the beneficial ownership of our common stock as of February 28, 2025 by:

- each person who is known by us to be the beneficial owner of more than five percent (5%) of our issued and outstanding shares of common stock;
- each of our directors and executive officers; and
- all directors and executive officers as a group.

The beneficial ownership of each person was calculated based on 8,292,077 common shares issued and outstanding as of February 28, 2025. The SEC has defined "beneficial ownership" to mean more than ownership in the usual sense. For example, a person has beneficial ownership of a share not only if he owns it, but also if he has the power (solely or shared) to vote, sell or otherwise dispose of the share. Beneficial ownership also includes the number of shares that a person has the right to acquire within 60 days, pursuant to the exercise of options or warrants or the conversion of notes, debentures or other indebtedness. Two or more persons might count as beneficial owners of the same share. Unless otherwise indicated, the address for each reporting person is 5370 Kietzke Lane, #201. Reno, Nevada 89511.

Name of Executive Officer or Directors	Number of Shares	Percentage Owned
Stephen Cotton	204,745	2.5%
Judd Merrill	59,218	*%
Ben Taecker	24,798	*%
Vincent L. DiVito	28,296	*%
Molly Zhang	25,136	*%
Eric Gangloff	57,200	*%
Steven K. Henderson	0	
Directors and executive officers as a group	342,193	4.1%

* Less than 1%.

Name and Address of 5% + Holders	Number of Shares	Percentage Owned
Alex Cushner 30 Sarah Drive Mill Valley, CA 94941	834,032(1)	10.1%
Robert W. Baird & Co. Incorporated 777 East Wisconsin Avenue Milwaukee, Wisconsin 53202	371,071	4.5%

(1) According to a Schedule 13G filed with the SEC on February 14, 2025 by Mr. Cushner, Mr. Cushner is deemed to beneficially own 809,312 shares of common stock held in client accounts over which he holds discretionary authority. These shares are also reported as beneficially owned by Robert W. Baird & Co. Incorporated, Mr. Cushner's employer, as set forth in a Schedule 13G filed by Robert W. Baird & Co. Incorporated with the SEC on February 11, 2025.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Related Party Transactions, Promoters and Director Independence

On February 15, 2021, we entered into a series of definitive agreements with LINICO Corporation, a Nevada corporation, or LINICO, pursuant to which we leased, with an option to purchase, our recycling facility at the Tahoe Reno Industrial Center, or TRIC, located in McCarran, Nevada, and acquired an approximate 11% equity interest in LINICO. Comstock Inc., a Nevada corporation (NYSE-MKT: LODE), is the beneficial owner of approximately 89% of the common shares of LINICO. Our Chief Financial Officer, Judd Merrill, served as a member of the board of directors of Comstock Inc. from September 2020 to April 5, 2023.

In December 2023, we exited our proposed collaboration with LINICO by way of the sale of our LINICO common stock to LINICO's parent, Comstock, Inc., for $600,000.

In February 2023, we entered into a $3 million secured debt facility with Summit Investment Services, LLC, an entity controlled by a member of our board of directors, Eric Gangloff, The indebtedness under the Summit debt facility is secured by all of our assets, with a few exceptions. All principal and interest under the Summit debt facility is due and payable on April 27, 2025. Please see Note 11 to our audited consolidated financial statements for a more complete description of the Summit debt facility.

On December 18, 2024, we entered into a Securities Purchase Agreement with eight accredited investors, including all of our current executive officers and most of our directors, in connection with a private placement of secured promissory notes ("Notes") in the aggregate principal amount of $1,500,000 and common stock purchase warrants ("Warrants) to purchase 750,000 shares of our common stock. The Securities Purchase Agreement includes customary representations, warranties, and covenants by the investors and us. Certain of our current officers and directors of the Company purchased Notes in the aggregate amount of $1,200,000.

Since January 1, 2023, we have not entered into any other transactions where the amount exceeded the lesser of $120,000 or one percent (1%) of the average of our total assets at December 31, 2024 and 2023 with any of our directors, officers, beneficial owners of five percent or more of our common shares, any immediate family members of the foregoing or entities of which any of the foregoing are also officers or directors or in which they have a material financial interest, other than the compensatory arrangements with our executive officers and directors described elsewhere in this report.

We have adopted a policy that any transactions with directors, officers, beneficial owners of five percent or more of our common shares, any immediate family members of the foregoing or entities of which any of the foregoing are also officers or directors or in which they have a financial interest, will only be on terms consistent with industry standards and approved by a majority of the disinterested directors of our Board. The policy has been formally adopted by resolution of our Board.

Our Board may establish the authorized number of directors from time to time by resolution. Our Board currently consists of five (5) authorized members. During the year ended December 31, 2024, our Board met seven times. All of our Board members attended at least 75% of the aggregate of all Board meetings and all meetings of the Board committees upon which they served while they were on the Board during fiscal 2024. Our Board does not have a policy regarding Board members' attendance at meetings of our stockholders and all members of our Board attended our prior year's annual meeting of stockholders.

Generally, under the listing requirements and rules of the Nasdaq Stock Market, independent directors must comprise a majority of a listed company's board of directors. Our Board has undertaken a review of its composition, the composition of its committees and the independence of each director. Our Board has determined that, other than Mr. Cotton, by virtue of his executive officer position, and Mr. Gangloff, by virtue of his $3,000,000 note payable with the Company., none of our current directors or director nominees has a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each is "independent" as that term is defined under the applicable rules and regulations of the SEC and the listing requirements and rules of the Nasdaq Stock Market. In making this determination, our Board considered the current and prior relationships that each nonemployee director nominee has with our Company and all other facts and circumstances our Board deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each nonemployee director nominee. Accordingly, a majority of our directors are independent, as required under applicable Nasdaq Stock Market rules, as of the date of this report.

Item 14. Principal Accountant Fees and Services

Fees Incurred for Services by Principal Accountant

The following table sets forth the aggregate fees billed to us for services rendered to us for the years ended December 31, 2024 and 2023 by our former independent registered public accounting firm, Armanino LLP, and our current independent registered public accounting firm, Forvis LLP, for the audit of our consolidated financial statements for the years ended December 31, 2024 and 2023, and assistance with the reporting requirements thereof, the review of our condensed consolidated financial statements included in our quarterly reports on Form 10-Q, the filing of our Form 8-K, and preparation of (Federal and State) Income Tax returns (in thousands).

	2024	2023
Audit Fees	$ 412	$ 292(3)
Audit - Related Fees (1)	0	46
Tax Fees (2)	0	46
	$ 386	$ 384

(1) Includes fees related to equity offerings

(2) Includes fees related to annual tax return preparation

(3) Armanino LLP audit fees were $160,000. Forvis LLP audit fees were $132,000.

Pre-Approval Policies and Procedures

The Audit Committee has responsibility for selecting, appointing, evaluating, compensating, retaining and overseeing the work of the independent registered public accounting firm. In recognition of this responsibility, the Audit Committee has established policies and procedures in its charter regarding pre-approval of any audit and non-audit service provided to the Company by the independent registered public accounting firm and the fees and terms thereof.

The Audit Committee considered the compatibility of the provision of other services by its registered public accountant with the maintenance of their independence. The Audit Committee approved all audit and non-audit services provided by Forvis and Armanino in 2024 and 2023.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Financial statements

Reference is made to the Index and Financial Statements under Item 8 in Part II hereof where these documents are listed.

(b) Financial statement schedules

Financial statement schedules are either not required or the required information is included in the consolidated financial statements or notes thereto filed under Item 8 in Part II hereof.

(c) Exhibits

The exhibits to this Annual Report on Form 10-K are set forth below. The exhibit index indicates each management contract or compensatory plan or arrangement required to be filed as an exhibit.

Number	Exhibit Description	Method of Filing
3.1	First Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 9, 2015.
3.2	Third Amended and Restated Bylaws of the Registrant	Incorporated by reference from the Registrant's Current Report on Form 8-K filed on January 21, 2022.
3.3	Certificate of Amendment to First Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 25, 2015.
3.4	Certificate of Amendment to the First Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on May 9, 2019.
3.5	Certificate of Amendment to the First Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on July 21, 2022.
3.6	Certificate of Amendment to the First Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Current Report on Form 8-K filed on November 1, 2024.
4.1	Specimen Certificate representing shares of common stock of Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on July 20, 2015.
4.2	Underwriting Agreement dated as of July 18, 2023 between the Company and The Benchmark Company, LLC	Incorporated by reference from the Registrant's Current Report on Form 8-K filed July 19, 2023.
4.3	Warrant dated August 4, 2023 issued to Network 1 Financial Services, Inc.	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
4.4	Warrant dated July 21, 2023 issued to The Benchmark Company, LLC	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
4.5	Warrant dated January 22, 2019 issued to National Securities Corporation	Incorporated by reference from the Registrant's Current Report on Form 8-K filed January 17, 2019.
4.6	Form of Non-Redeemable Common Stock Purchase Warrant issued to investors in May 2024 public offering	Incorporated by reference from the Registrant's Current Report on Form 8-K filed May 15, 2024.
4.7	Form of Warrant Agency Agreement to be entered into between the Company and VStock Transfer, LLC	Incorporated by reference from the Registrant's Current Report on Form 8-K filed May 15, 2024.
4.8	Form of Underwriter Warrant to be issued to the Benchmark Company, LLC in May 2024 public offering	Incorporated by reference from the Registrant's Current Report on Form 8-K filed May 15, 2024.
4.9	Form of Common Stock Purchase Warrant issued to investors in December 2024 private placement	Filed electronically herewith.
4.10	Description of Capital Stock	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on February 25, 2022.
10.1	Form of Indemnification Agreement entered into by the Registrant with its Officers and Directors	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 9, 2015.
10.2	Loan Agreement dated January 27, 2023 with Summit Investment Services, LLC	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.

10.3*	Aqua Metals, Inc. Officer and Director Share Purchase Plan	Incorporated by reference from the Registrant’s Quarterly Report on Form 10-Q filed on November 9, 2017.
10.4*	Aqua Metals 2019 Stock Incentive Plan	Incorporated by reference from the Registrant's Definitive Proxy Statement filed on March 4, 2019.
10.5*	Loan Agreement dated September 30, 2022 with Summit Investment Services, LLC	Incorporated by reference from the Registrant’s Annual Report on Form 10-K filed on March 9, 2023.
10.6*	Amended and Restated Executive Employment Agreement dated August 7, 2023 between the Registrant and Stephen Cotton	Incorporated by reference from the Registrant’s Annual Report on Form 10-K filed on March 28, 2024.
10.7*	Amended and Restated Executive Employment Agreement dated August 7, 2023 between the Registrant and Judd Merrill	Incorporated by reference from the Registrant’s Annual Report on Form 10-K filed on March 28, 2024.
10.8*	Amended and Restated Executive Employment Agreement dated August 7, 2023 between the Registrant and Benjamin Taecker	Incorporated by reference from the Registrant’s Annual Report on Form 10-K filed on March 28, 2024.
10.9*	Amended and Restated Aqua Metals 2022 Employee Stock Purchase Plan	Incorporated by reference from the Registrant's Definitive Proxy Statement filed on April 5, 2023.
10.10	Form of Secured Promissory Note issued in December 2024 Private Placement	Filed electronically herewith.
10.11	Security Agreement dated December 18, 2024 between the Registrant and Purchasers of Notes in the December 2024 Private Placement.	Filed electronically herewith.
19.1	Aqua Metals Insider Trading Policy	Filed electronically herewith.
21.1	List of subsidiaries of Registrant.	Incorporated by reference from the Registrant’s Annual Report on Form 10-K filed on March 28, 2024.
23.2	Consent of Forvis, LLP, Independent Registered Public Accounting Firm.	Filed electronically herewith.
31.1	Certification under Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith.
31.2	Certification under Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith.
32.1	Certifications Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350.	Filed electronically herewith.
99.1	Aqua Metals Executive Officer Clawback Policy	Incorporated by reference from the Registrant’s Annual Report on Form 10-K filed on March 28, 2024.
101.INS	Inline XBRL Instance Document	Filed electronically herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document	Filed electronically herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	Filed electronically herewith
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	Filed electronically herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	Filed electronically herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	Filed electronically herewith
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).	Filed electronically herewith

* Indicates management compensatory plan, contract or arrangement.

Item 16. Form 10-K Summary

Not provided

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this annual report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

AQUA METALS, INC.

Date: March 31, 2025

By: /s/ *Stephen Cotton*
Stephen Cotton,
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ *Stephen Cotton* Stephen Cotton	President, Chief Executive Officer and Director *(Principal Executive Officer)*	March 31, 2025
/s/ *Judd Merrill* Judd Merrill	Chief Financial Officer *(Principal Financial and Accounting Officer*	March 31, 2025
/s/ *Vincent L. DiVito* Vincent L. DiVito	Director, Chairman of the Board	March 31, 2025
/s/ *Eric John Gangloff* Eric John Gangloff	Director	March 31, 2025
/s/ Peifang Zhang Peifang Zhang	Director	March 31, 2025
/s/ *Steven K. Henderson* Steven K. Henderson	Director	March 31, 2025