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HALLGARTEN + COMPANY

Corporate Action

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Cascadero Copper
(TSX-V: CCD | OTCQC: CCEDF)
Strategy: NEUTRAL

Key Metrics	
Price (CAD)	$0.025
12-Month Target Price (CAD)	n/a
Upside to Target	n/a
12mth high-low	$0.005 to $0.025
Market Cap (CAD mn)	$7.50
Shares Outstanding (mns)	300.13
Options	1.00
Warrants	19.33
Fully diluted	320.46

Cascadero Copper

A Pure Cesium Play is Born

+ In an interesting turn of events, the long moribund Cascadero Copper has engineered a restructuring to turn it into a pure Cesium play
+ The Taron deposit in Argentina´s Salta province is a primary Cesium target with a resource and a PEA
+ The mineralisation is a unique form called geyserite (only otherwise known in Tibet) and totally different to the usual LCT pegmatite format
+ The deposit has the potential, if brought into break not only Sinomine´s monopoly grip on Cesium while potentially breaking the decades long "Cabot" model of formate leasing
+ The cash received for the Taca Taca block sale will give CCD more funds than it has ever had before at its disposal
+ The Lumina interest in the block adjacent to Taca Taca may signal that this long dormant mega copper project may be in revival mode
- Despite the use of the words "arms-length" we are not getting that vibe from this transaction
- The Chinese will obviously want to get their hands on this asset with maybe only the Canadian government standing between them and their goal
- Instead of "all-change" it looks like the same old motley crew in management so can one really expect anything different
- The market´s tepid response to the news signals both the lack of faith in management and the general obscurity of the stock in recent years

Some Context

It is unusual that the analyst is as close to the subject company (or rather was so close) as for six months in 2020, the analyst played a corporate doctor role as the disastrous situation that was Cascadero Copper in the wake of it having been run by two bibulous individuals for, at least, the previous ten years. They had both shuffled off the mortal coil by that stage leaving an extremely fractious board, unable and unwilling to grapple with the challenges and opportunities that came from owning two major assets and a bunch of minor assets, all in the northern provinces of Argentina.

That which had attracted us to taking on the CEO´s role was the Taron Cesium deposit, which is the most substantial undeveloped Cesium deposit in the world, which despite having a resource and PEA, was largely overlooked, as was the element that it possessed. The other intriguing asset was a highly strategic concession block bordering/surrounding Taca Taca.

Our forensic examination of the balance sheet going back ten years showed a massaging of the numbers, particularly intangibles, that could be categorized as outrageous. We duly reported this to the BCSC, that as usual did nothing. Their priority, as we all know, is making sure that no-one totals their resources categories while every other rort is open season.

After cleaning house and getting the stock from 1.5 cts to 5.5cts, the highest level it had seen in years, we eventually bailed on this unremunerated role and left the board (and the hidden hands) to stew in their own juices. Life is too short to deal with morons or, as they say, you can't cure stupid.

Now, in recent days, a transaction has occurred that clears the air. It has a certain whiff of the self-serving despite claims of "arms-length", when "up to the elbows" or "fill yer boots" might be a better description.

In this Corporate Actions note we shall look at the main assets that have precipitated the "carve-up", what this deal looks like and some consideration of what might happen next to these assets.

On Cascadero Copper

This company has been "focused" on the exploration and development of its properties located in Argentina.

Following completion of the transaction, the company expects to use a portion of the proceeds of the transaction to continue evaluating the Taron Cesium project. Though why only a portion, when it is the only asset, remains moot. A few years back, Cascadero had commissioned Wardell Armstrong International to prepare a PEA on Taron entitled "Preliminary Economic Assessment Taron Cesium Project, Argentina" with an issue date of April 22, 2024 and is "considering the recommendations set forth therein".

In the wake of the deal, the company claims that the Cascadero research & development team, that was instrumental in developing the patent-pending mineral processing flowsheet on Taron mineral samples, are expected to continue their work. Why would they not advance the project to production while the RIGI scheme lasts and while Cesium is a hot topic defies logic, but defying logic is the one constant at Cascadero.

On Cesium

We shall not reiterate here the attractions and complications of Cesium but instead refer investors to our note published last year on the subject.

Cesium, or with its more classical Latin spelling, *Caesium*, is a chemical element with; it has symbol Cs and atomic number 55. Contrary to what one might think that it is named after Julius Caesar, it is in fact named

after the Latin word *caesius*, meaning "bluish grey".

Cesium has physical and chemical properties similar to those of Rubidium and potassium.

The chemistry of Cesium is similar to that of other alkali metals, in particular Rubidium, the element above Cesium in the periodic table. It is a soft, silvery-golden alkali metal with a melting point of 28.5 °C, which makes it one of only five elemental metals that are liquid at or near room temperature.

It is pyrophoric and reacts with water (often very explosively). It is the least electronegative stable element. It has only one stable isotope, Cesium-133.

The Deal

On the 1st of September 2026, the company announced that it has entered into a share purchase & sale agreement with Lumina Copper Corp., a wholly-owned affiliate of First Quantum Minerals (TSX: FM | OTCQB: FQVLF) and Nelson Borch, a director of the company.

The vendors agreed to sell to Lumina all of the issued and outstanding shares of a subsidiary, Cascadero Minerals Corporation (CMC), which is owned 70% by Cascadero Copper and 30% by a director thereof, one Nelson Borch, for consideration consisting of:

(i) US$15mn in cash payable upon closing, subject to certain adjustments

(ii) Deferred consideration of up to US$4mn in cash payable after closing upon the occurrence of certain events

Through its subsidiaries, Salta Geothermal S.A. (SGSA), and Arisaru Resources S.A., CMC owns or will own certain mining rights, in Salta Province, comprising:

- La Sarita I, La Sarita II, La Sarita Sur II, Sarita Este (49%)
- Francisco I (50%)
- Francisco II (50%)
- Desierto I (33.3%)
- Desierto II (33.3%)
- Sarita Sur, Amarillo, Viejo Campo, Demasia - La Sarita I and Demasia - Sarita Sur.

The Terms of the Deal

The deferred consideration consists of:

(i) US$2mn payable to the vendors within ten business days after the board of directors of Lumina or any of its affiliates makes a final investment decision to construct the Taca Taca project

(ii) US$2mn payable to the vendors within ten business days of US$100mn has been incurred for construction of the Taca Taca project
(iii) All consideration will be allocated to the Vendors in accordance with their respective interest in CMC

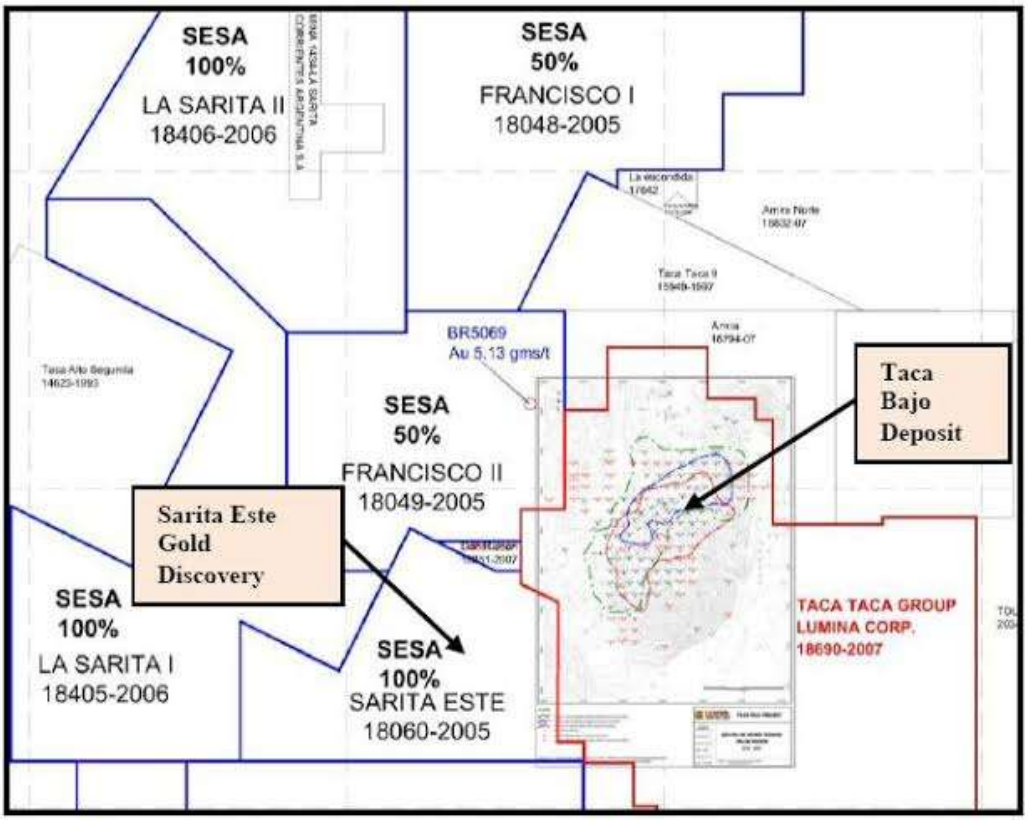
At closing of the transaction, Lumina will, on behalf of the company, pay approximately US$925,000, or such amount that is then outstanding, payable by the company to an arm's length third party. As a result, the upfront consideration and the company's portion thereof will be adjusted accordingly.

Folk legend had it that this agreement (the payment to the third party, a driller) in the event of any sale of the assets in Salta had been written on a napkin or a coaster between the former CEO and the recipient in some smokey "*bar de mala muerte*" in Salta. Its revelation years later was the subject of an embarrassing news release revealing this contingent liability. Oops.

Additionally, in connection with the transaction, the company (i.e. CCD) will assume approximately $163,631 of debt owed by CMC to NelsonBorch.

Taca Taca & Its Neighbourhood

The Taca Taca project is located in the province of Salta, in northwestern Argentina, 55 km from the border with Chile. The deposit is suitable for large-scale conventional open-pit mining. Below one can see the expansive concessions held by CCD (partially) surrounding Taca Taca:



Taca Taca came into the First Quantum orbit with the closing of the acquisition of Lumina Copper for around about CAD$450mn in August of 2014. Lumina Copper was a vehicle of Ross Beaty. Since its purchase it has been seen as a lame duck asset in a “difficult” jurisdiction. Dissing Argentina was largely just a feint to justify the disastrous over-focus on Panama, and we know how that ends.

Historical estimates of mineral resources, dating back to 2013, have been updated by First Quantum’s own detailed reviews, and a full environmental and social baseline study is at an advanced stage, along with discussions with local communities and authorities.

At full production, it could deliver more than 320,000 tpa of copper, accounting for around 1.5% of global copper mine supply.

First Quantum has recently been on a quest to consolidate several concessions and exploration permits. At some point we were informed that offer(s) had been received from First Quantum for some of these concessions “to place overburden or tailings”. Whether these were written or informal was not made clear. We never saw them. The comment was made, though CCD regarded this as spurious, because it was believed that the deposit may extend under the CCD territory.

To us this is the real reason behind the current transaction. If so, then the maximum of $19mn being paid for the concessions is a really low-ball price. Time will tell.

The property is subject to a 1.5% net smelter returns royalty.

In late July of 2026, Bloomberg reported that First Quantum Minerals was in discussions to sell a minority stake in its Taca Taca copper project in Argentina. Potential buyers were said to include Rio Tinto Group, along with Japanese trading companies Mitsubishi and Mitsui & Co.

Splitting Out Taron

CCD will complete a reorganization under which Cascadero Minerals S.A. will become a directly-owned subsidiary of the listed company, and this will retain its ownership interests in the seven properties comprising the Taron Cesium project (El Oculto, Centauro, Cerro Lari I, Cerro Lari II, Las Burras, Incahuasi and Santa Rosa).

Following completion of the transaction, the company will be primarily focused on the exploration and development of the Taron Cesium project in Argentina, and it will continue to own a portfolio of prospective exploration properties in Argentina.

"Non-Arm's Length Party"

Nelson Borch, as a director of CCD, was described in the release as a "Non-Arm's Length Party" under the policies of the TSX Venture Exchange, while Lumina is not a "Non-Arm's Length Party".

The sale of the company's interest in CMC constitutes a sale of “substantially all of the company's undertaking” and, consequently, the deal will require approval of at least 66⅔% of the votes cast by

shareholders of CCD at a special meeting of shareholders. The transaction also constitutes a "Reviewable Disposition" under the policies of the TSXV.

Lumina entered into voting and support agreements with certain shareholders of CCD holding an aggregate of approximately 47.9% of the outstanding common shares of the company, calculated on a partially diluted basis. While merely guessing at this point we would not be surprised to find that these were Nelson Borch and Lorne Harder.

The shareholders signing on to the voting and support agreement have committed to vote their shares in favour of the transaction, vote against any transaction that could reasonably be expected to impede or delay completion of the transaction (a better offer?) and comply with certain customary restrictions on the transfer of their securities pending completion of the transaction.

The debt assumption element constitutes a "related party transaction" within the meaning of Multilateral Instrument 61-101 - Protection of Minority Security Holders in Special Transactions (MI 61-101). The company is expecting to rely on the exemption from the valuation requirements and minority shareholder approvals as the value of the Debt Assumption does not represent more than 25% of the market capitalization.

The Board of Directors

Lorne Harder, director and Chairman, should be seen first and foremost as the brother of the former CEO, Judith Harder-McWilliams who was the CEO until her untimely death in 2019. She had been the wife of Bill McWilliam who then died in March of 2020. He had been the founder, a director and some point the CEO of Cascadero and had cobbled together the asset collection of Cascadero in the first place.

After Judith Harder and Bill McWilliam died, then their shares passed to heirs constituting a key voting block though at our time at the company they were still in probate and it was not clear where they would go or who spoke for them.

Mr. Harder was in the insurance industry for over 30 years, much of it as a major shareholder in a large regional brokerage. He holds a Diploma of Financial Management and a Bachelor of Administration (Accounting) degree and was awarded a Fellow Chartered Insurance Professional (FCIP) designation by the Insurance Institute of Canada.

George Gale, director and Interim CEO, has worked in mineral deposits studies and exploration since 1964. He has been involved in the discovery of industrial mineral deposits in Newfoundland and Manitoba, volcanogenic massive sulphide (VMS) deposits in Manitoba and a copper-molybdenum deposit in Norway. In addition to conducting detailed studies of VMS and gold deposits in Manitoba he has undertaken geochemical studies and helped develop new methods for mineral exploration.

He was VP of Exploration for VMS Ventures Inc and Harvest Gold Corp from 2005-09 and is currently the President and CEO of Namex Explorations Inc, a gold exploration company, and CEO and Chairman of Triple Nine Resources Ltd and Four Corners Mining Corporation, which are advancing an Iron-Titanium-

Vanadium deposit in Newfoundland. He is a member of the Professional Association of Engineers and Geoscientists of Manitoba and a Fellow of the Society of Economic Geologists.

Tony Cau, non-executive director, is a Civil Engineer with global experience in the metals processing and engineering industry. He joined Bateman Engineering Pty Ltd (Australia) from 1997 to 2005 holding positions of increasing responsibility including Managing Director for Australia. From 2005 to 2008, he was employed by BHP Billiton as VP Project Delivery and a member of the Aluminium executive committee. He then was Senior VP and Managing Director (Australasia) for SNC Lavalin from 2008 to 2009. From 2013 to 2017, he delivered engineering consulting and project services through Cau Engineers & Associates with global clientele for polymetallic processing (most notably at the Tungsten mine, Nui Phao in Vietnam for Masan Resources), USA oil sands, and rare earths (Lynas Corporation, Australia and Malaysia). In 2018, he was employed through Ausenco as Project Director in Peru.

Intriguingly, he served as Project Director for the LeadFX Feasibility Study in Western Australia in 2019, for a new lead leaching and electrowinning process. This then leads us to the subject of "the Greek" who was involved in inveigling us into the CCD and has been scandal ridden at LeadFX and at Search Minerals, a REE stock we have covered in the past. The "Greek" has since has been on the losing end of lawsuits, not least of which is one involving Lorne Harder. Small world…

Dr. David Dreisinger, a non-executive director, holds the position of Industrial Research Chair, Hydrometallurgy at the University of British Columbia where he has been a Professor since 1988. He has over 250 publications to his credit and has been involved as a process consultant for metallurgical companies for many years. He has participated in 19 U.S. patents for work in areas such as pressure leaching, ion exchange removal of impurities from process solutions, use of thiosulfate as an alternative to cyanide in gold leaching, and leach-electrolysis treatment of copper matte. He also co-invented the Mt. Gordon Copper Process for copper recovery from sulfide ores and the Sepon Copper Process for copper recovery from sulfidic-clayey ores. He has been actively involved in the development of the proposed metallurgical flow sheet for Boleo and is one of the recognized experts in the world in the area of hydrometallurgy. He is also a director of Polymet Mining Corp. and Search Minerals (that name again) and holds officer positions with Search Minerals Inc. and Trimetals Mining Inc.

Nelson Borch, non-executive director, graduated from the University of British Columbia in 1986 with a BASc in Civil Engineering. He spent the early part of his professional career in Canada with Ocean Construction and Tilbury Cement. From 1994 to 2001 he was the CEO and Managing Partner in the Engineering Consultancy Company, Terra Geotechnics Sdn Bhd, in Malaysia. From 2001 to 2013 he served as Executive Director of PT Indocement Tunggal Prakasa in Indonesia.

He had a long career in Engineering, Management, Sales and Distribution of Building Materials, Capital Project Development and Resource Development and Extraction companies. He also has experience as an Independent Director and Audit Committee Chair of public listed companies. From 2006, Nelson has also been a principal of a privately held Investment, Venture Capital and Property Development business. He is a member of the Association of Professional Engineers and Geoscientists of the Province

of British Columbia.

Cesium - The Flurry in the Promotorial Classes

We refer investors to our Cesium Primer that was published last year.

The mining equities space has seen an upsurge of companies claiming to have Cesium in their mineralisations. The managements of some of these companies know little to nothing about Cesium and the term "critical mineral" is thrown about with gusto and seemingly lacking awareness that the mineral is NOT on any critical minerals list because it is so little used and certainly the world would not stop turning (and guns would not stop firing) if no Cesium was ever produced again.

This has not stopped the metal/mineral from being co-opted into the hallowed realms of criticality.

Risks

Despite those positives we would note the following risks:

- Management, management, management
- Ottawa blocking a Chinese move on the asset
- Management deciding to mine the market rather than mine the element
- Patent-pending technology notwithstanding, there is the chance that metallurgy might confound the mining and processing of this novel material

As we think we have made clear our view of management's abilities could not be lower. Having been up close and personal, to know them is to not love them. Their abilities have been made patently clear during the period since we left in 2020 when they collapsed the stock price and then wandered in the wilderness during the resurgence of interest in Cesium and the improvement ion perceptions of Argentina. Does this deal change their spots? We cannot see why.

The "Greek" is a bad egg. We have not spoken to him since the day we became CEO at CCD. Subsequent lawsuits (and cases brought by individuals and governments in jurisdictions as varied as Canada, Switzerland and Bermuda) particularly relating to Search Minerals and LeadFx show how malignant he is/was. During our time the then-CEO of Search Minerals was foisted upon CCD while two of the current directors have had relations with LeadFx and Search during the period of the "Greek's" ascendancy at those places.

Some cryptic comments about using a "portion of proceeds" of the asset sale to understand the asset better gives one the queasy feeling that this crew are seemingly going into classic Vancouver promote mode without any of them being able to promote themselves out of a wet paper bag. So, the danger is that an investor in CCD neither gets a mine nor even a decent dose of faking to make a mine. They fail at Howe Street 101.

Whether this HPAL technology works at commercial scale (rather than mere bench-testing) will be a

pivotal moment, but maybe too late if one has spent US$600mn in capex on the project and concept. Harking back to the "Greek", we note that the *modus operandi* used to gain his foothold in various stocks was vending in the "mold-breaking technology" in exchange for large strategic blocks of stock and then installing directors who did his bidding. This makes us wonder whether this cure-all process is actually to maximise mineral recoveries or to gain a corporate toehold. Say no more…

Investment Thesis

To say we know more about this stock than anyone else is an understatement as one of the author of this report was the CEO of Cascadero Copper in 2020, when he was brought in the resolve a fractious, and finally deficient, situation after many years of use and abuse of the assets and shareholders by miscreant management. Proving to be recalcitrant, unreformed and oblivious to corporate governance, that CEO departed. The stock slumped back to *de minimis* levels and has remained there since.

In the latest set of accounts, for the six months ended 31st of May 2026, the cash in bank was a mere CAD$21,117. Ergo, at the last measuring CCD was running on empty and now suddenly has $10.5mn coming its way in short order (with some extra millions in deferred payments as Taca Taca evolves). This may be called a genius move, pulling victory from the jaws of defeat, but we offer no bouquets to the hapless crew that took the company to the brink of dissolution before the clouds parted and salvation was bestowed.

The latest deal is a reset, but current management finds it difficult to exit a wet paper bag, let alone move forward the world´s premier Cesium deposit. The last five years have proven the ideal financing and promotional opportunity to advance this exceptional asset while a crowd of lilliputians in the Canadian markets have made hay from much humbler (and more challenged) projects. The open goal was in front of CCD's board and they missed, indeed didn't even kick the ball. Why should this change?

Never was a truer word said when someone´s lips uttered "You can´t cure stupid".

Taron will be taken over. If it's an offer from the Chinese, then it will be interesting to see if Ottawa is more on the ball when the offer wafts in than it was when it allowed Cabot Corp to sell Bernic Lake out from under Canada´s strategic interest in 2019.

Rating & Target

Can one put a **NEUTRAL** rating on a stock that has the most exciting (and doable) asset in the Cesium space just because the management is so dire? Can we trust management to screw up the opportunity that has fallen into their lap?

Imagining oneself as a fly on the wall at the moment the deal to sell off what we might call *Taca Taca Light* was presented to the board can we imagine this as some collective brainwave of the board or something that not entirely disinterested insider party has presented at their "darkest hour"? Did the board grab at this like it was manna from heaven? We have no doubt it was the latter. If that board had an idea it would die of loneliness.

Without a change of management that resembles the Saint Valentine´s Day massacre, the company is congenitally unable to move forward. Blood on the walls is what this company needs in the C-Suite. As such we must rate the company as a **NEUTRAL** with an admonition to watch it out of the corner of your eye. The stock soared 25% to a level that was less than half it was on our watch in the darkest days of the pandemic. It is either worth $50-$100 million with a dynamic team or not worth a damn with the current crew.

Appendix I:

On Taron

A Most Unusual Asset

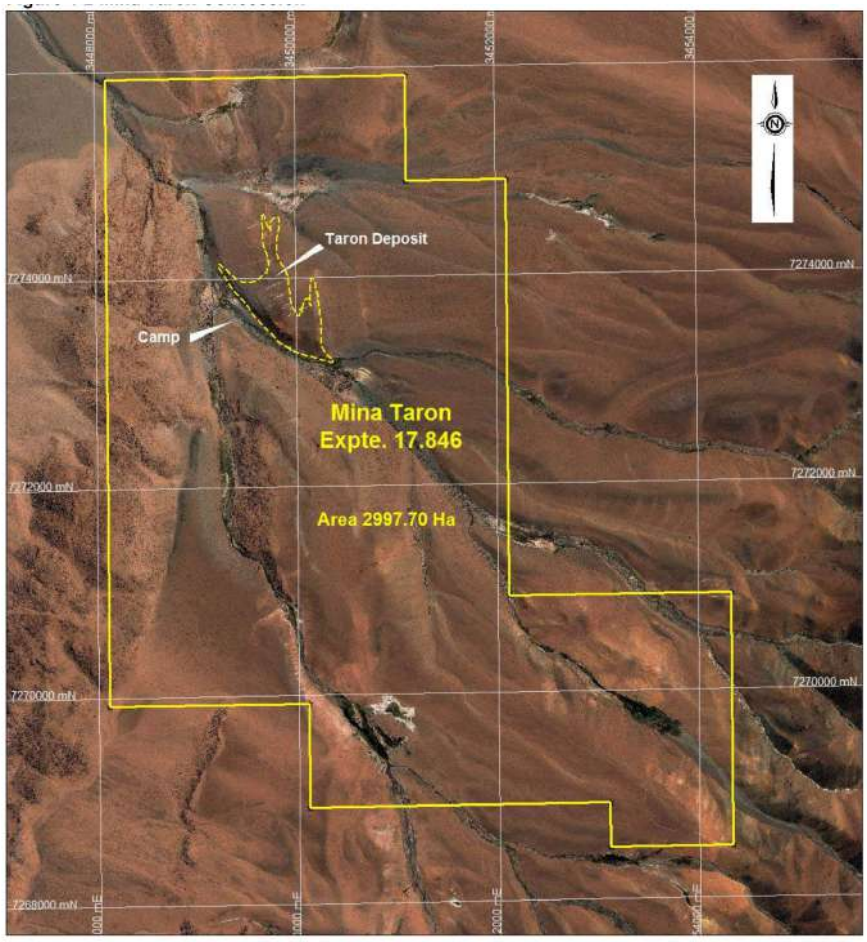
Despite all this the company has a few gems in its portfolio, the relevant one here being Taron, which is the only standalone Cesium project in the world with an extant resource, and indeed, a PEA.

The Taron project is located 160 km northwest of the city of Salta, Argentina, and a three-hour drive from the town of San Antonio de los Cobres. It is readily accessible by roads that lead to several former manganese mines and currently producing borax mines.

The property consists of five Contiguous Mineral Tenures, approximating 8,179 hectares (83 Units) in area. The Tenures are registered to Cascadero Minerals S.A. (CMSA), which is 100% owned by Cascadero Minerals Corporation (CMC), which is 70% owned by Cascadero Copper Corporation (CCD) and 30 % owned by Regberg Ltd. (a company of Nelson Borch). CMC operates as a 70% CCD and 30% Regberg joint venture.

The project area (shown above) lies on a gently west sloping plateau about 4,250 metres above sea

level. The topography is subdued to moderately rugged and vertical relief above the local datum is about 80 metres. The climate is arid with annual rainfall in the summers of 200-400 mm.



Some History

Manganese was mined on a small scale at Taron, beginning in the Second World War and continuing into the middle 1950s. Regional exploration by geologists working for Argentine Frontier Resources Inc. (AFRI), a private Vancouver-based exploration company, recognized the association of manganese with silver deposits in the area, and routine geochemical sampling led to the discovery of the Taron Cesium deposit in 2004.

Interestingly, all of the work conducted on the Taron property was financed by MI SWACO, a related company to Schlumberger Ltd., under an option to acquire an interest in the deposit. This option was dropped in 2007 when Chemetall GmbH may have expressed concerns to MI SWACO about the arsenic content of the Taron deposit.

AFRI was subsequently acquired by Cascadero Copper in June 2009.

Geology

The project lies in the eastern part of the central Andes and straddles the contact between the Eastern Cordilleran Ranges and the Altiplano-Puna.

The Ochaqui Basin is an informal name assigned to the graben-like structure that hosts the Taron deposit in Late Tertiary sedimentary and volcanic rocks dominated by sandstone and conglomerate facies. An epithermal event, of Miocene age, metasomatized pre-existing rocks forming assemblages of cryptocrystalline silica, colloids, gels, manganates, arsenates, and oxides (collectively termed *geyserites*) and travertine within the porous sediments.

The main zone of +200 ppm cesium mineralization lies in the Core and North Zones which cover a 700 x 1500 metre area intermittently exposed over a vertical range of 80 to 100 metres. Within this zone, the average Cs grade based on the 2017 drill results is about 1400 ppm Cs.

A Petrographic, XRD, SEM study concluded that Cs reports predominantly as a Cs-substituted pharmacosiderite at levels of up to 12% Cs in this phase.

Geyserite

Taron is also interesting and novel in that it is a “geyser” deposit of Cesium rather than a pollucite deposit. There is supposedly one other such deposit and it is at Chabu in Southern Tibet.

Geyserite, or siliceous sinter, is a form of opaline silica that is often found as crusts or layers around hot springs and geysers. Botryoidal geyserite is known as fiorite. Geyserite is porous due to the silica enclosing many small cavities. Siliceous sinter should not be confused with calcareous sinter, which is made of calcium carbonate.

In an interesting aside, in May 2017, evidence of the earliest known life on land may have been found in 3.48-billion-year-old geyserite uncovered in the Pilbara Craton of Western Australia.

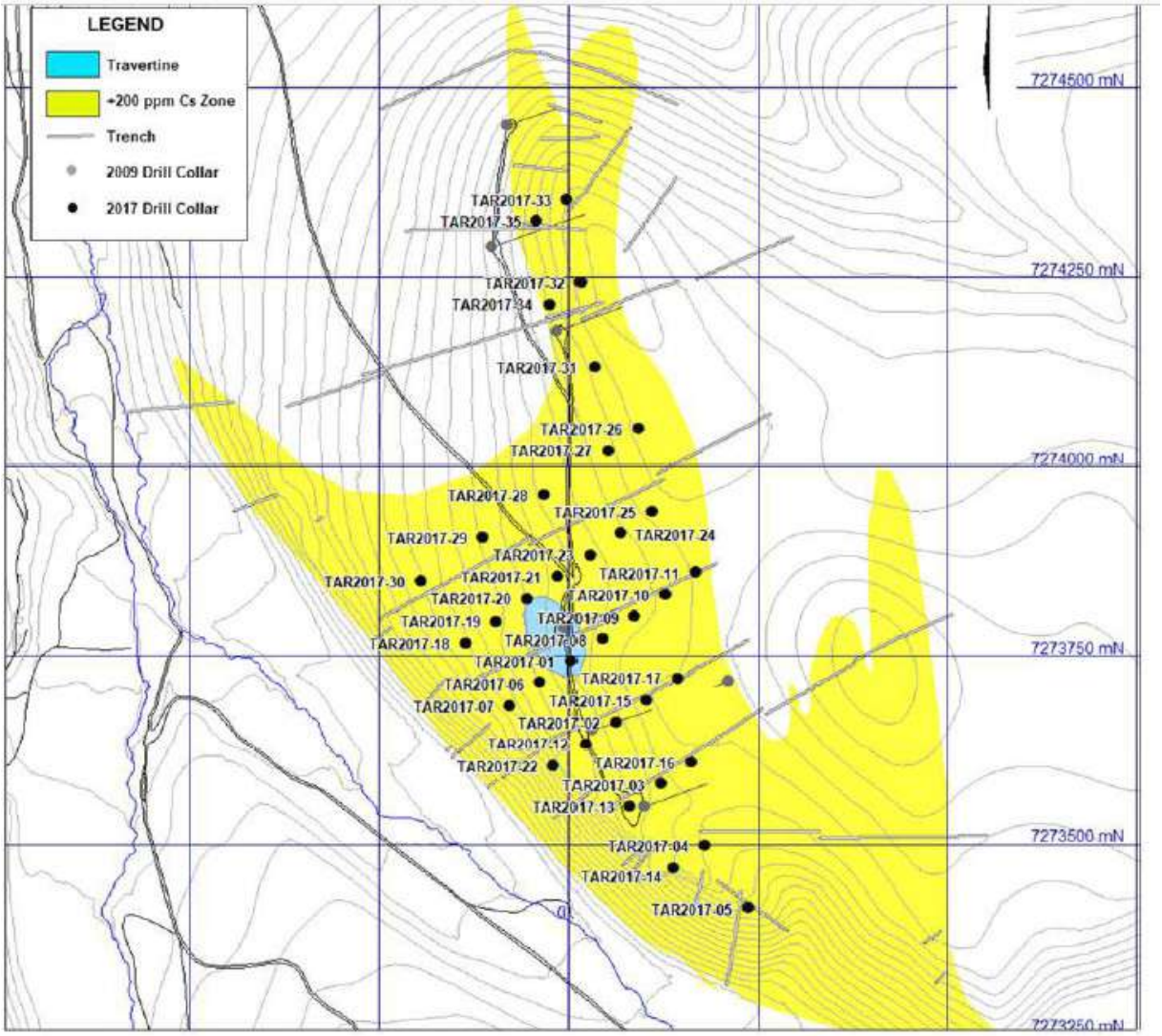
Exploration

In 2005 and 2006, 5600 metres of hand and mechanized trenching were completed, sampled and analyzed. Cascadero completed seven HQ diamond drill holes totaling 907.2 metres. between May and June 2009.

In 2017, Cascadero completed a 35-hole diamond drilling campaign. These holes are shown in the map on the following page.

PEA & Resource

In mid-May of 2024, the company released the details of a Preliminary Economic Assessment (PEA) on the Taron Cesium project. The PEA was completed by Wardell Armstrong International (WAI).



The PEA indicated that the drilled portion of the Taron property has a 23.85mn tonnes at a grade of 2,131 ppm Cesium.

The PEA claimed that using the company's patented extraction process developed at the University of British Columbia and a Cesium Formate price of $50,000/t, the project has a 14+ years of mine life with a NPV (at 10%) of US$79mn, an IRR of 14% and a payback period of less than five years.

Due to the opaque nature of the Cesium market, WAI conducted a resource sensitivity assessment at varying Cesium prices. An increase in Cesium Formate price of only 20% increases the NPV by almost four times. However, we would posit that the introduction of a new source of Cesium would more likely lower the Cesium Formate price than raise it. And moreover, we sustain that the Cabot model of leasing means that there is virtually no Cesium Formate market for sale transactions so thus price estimates are somewhat theoretical.

Geological modelling, block modelling, and grade estimation for the Taron deposit were carried out by GeoSim Services Inc. The work completed by GeoSim was done in preparation for the 2017 NI 43-101 Technical Report for the Taron deposit however this was considered a Mineral Inventory as reasonable prospects of eventual economic extraction (RPEEE) could not be declared at the time.

Taron MRE

1,239 ppm Cs2O cut-off

Category	Tonnes	Cs_2O ppm	Cs_2O tonnes
Inferred	23.85	2,131	50,810

WAI reviewed the work completed by GeoSim and prepared the block model for optimisation and the application of current RPEEE factors for reporting Mineral Resources in accordance with the guidelines of the JORC Code (2012).

Mining & Economics

The PEA assessed the development of the Taron project mineral resource by open pit mining.

The total CapEx for the Taron project is estimated at US$596.3mn, of which the process plant equates to US$427.5mn. The initial capital cost is US$477.7mn with the remaining allocated to sustaining capital (US$96.4mn) and closure costs (US$22.2mn). By using a contract miner, mining capital costs are minimized, at the expense of higher mining operating costs.

The project operating cost includes US$4/t for mining, US$84.1/t processing, US$0.3/t tailings management, and US$1.0/t for G&A. This equates to a total LOM operating cost of US$2,027mn, or an average LOM operating cost of US$91.5/t ore processed.

The resultant DCF analysis, at a discount rate of 10%, has presented a positive NPV of US$79mn with an IRR of 14%. The project payback period is estimated to be in the fifth year of operations.

To be frank, an NPV of a mere US$79mn is decidedly skinny in light of a Capex of nigh on ~US$600mn.

Recovery & Processing

The plan is to use the company's patented High-Pressure Acid Leaching (HPAL) process to produce a final solution containing Cesium hydroxide to which formic acid is added for the production of an 80% Cesium Formate brine.

We would note that the mere mention of HPAL in the context of Nickel mining and processing is akin to shouting “leprosy” or “Ebola” in a crowded room due to the well documented disasters and cost

overruns with this methodology. Maybe Cascadero, in its own humble way, has evaded this problem, maybe not.

The Taron deposit contains significant concentrates of Cesium in a complex oxidized mineral assemblage associated with iron-arsenic-aluminum-manganese-silica mineralization. The recovery of Cesium has been studied using sulfuric acid leaching with recovery of Cesium as alum. The waste solution from Cesium recovery is oxidized and neutralized to form stable iron - arsenate residues. The Cesium alum is further treated to form high purity Cesium hydroxide, which may be further processed to a range of Cesium salts, including Cesium formate.

The Patent

In September of 2020, the United States Patent Office published US Patent 10,738,370 (issue date August 11, 2020) entitled "Recovery of Cesium from Epithermal Mineral Deposits" with the Company as assignee.

This patent protects the process developed by the joint team of inventors working on the metallurgical development of the Taron cesium project. The patent describes an acid leaching technology followed by cesium recovery as an alum (cesium, aluminum sulfate precipitate) and refining of the alum to produce cesium hydroxide. The cesium hydroxide product can then be converted to cesium salts such as cesium formate by reaction with formic acid. Cesium formate is used as a key component of high-density brines used to safely control the extreme pressures encountered in oil and gas drilling.

The inventors of the process: Dr. Mohammad Mokmeli and Dr. David Dreisinger (currently a director of CCD) of the University of British Columbia who were advisors to Cascadero, and Dr. David Trueman and Dr. Bruce Downing, world authorities on Cesium geology and exploration and the Bill McWilliam, formerly the CEO of Cascadero.

Our Take

The interesting “tell” in all this was the interest of Schlumberger. It is our understanding that many in the oil/gas drilling fraternity have long been frustrated by the “Cabot model” of owning and leasing Cesium formate to drillers. Sinomines have inherited and embraced this model. Until Schlumberger were scared off by supposed Arsenic content, it looks like this was an attempt by this oil services major to break the monopoly grip of Cabot (now Sinomines).

This is the secret to Cesium’s appeal. The atomic clocks may seem cool and interesting they use, quite literally, mere atoms of Cesium. They do not move the dial in the Cesium outlook.

Finding and developing a new non-Sinomines source of Cesium would break the monopolistic grip. However, Sinomines know this so they must be considered a prime candidate to go for Taron at some point. The imperative being to block interlopers. One new substantial source of Cesium and the Sinomines dominance is smashed.

As we noted earlier, the only thing standing in the way of such a deal would be Ottawa. In an interesting twist the declaration of Canada to be an enemy by the Trump Administration means that Ottawa may not be as interested as taking Washington's call these days when it wants to object to Canadian-owned assets falling into Chinese hands as it did several years ago when the Chinese were told to cease & desist attempting to gain control of Lithium Chile etc.

Rightly the phone should be allowed "to ring off the hook".

Important disclosures

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