

### La Cobaltera Cobalt-Copper Project

### San Juan District, Chile

October 2022

John Tumazos Very Independent Research Conference

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### Chilean Cobalt Corp: Go Forward Plan

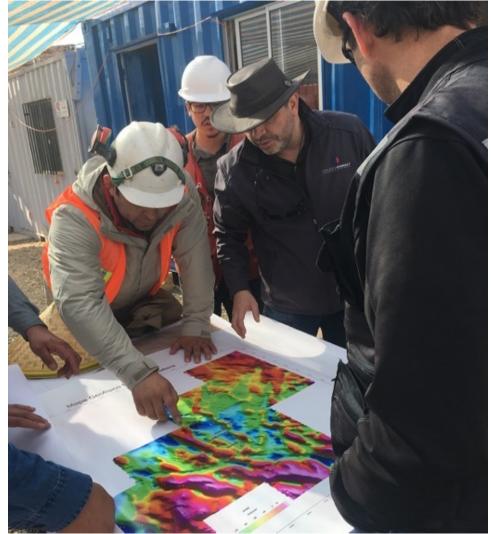


- □ Final private funding round, pre-listing. USD \$5 to 7 million raise @ pre-money valuation of \$25 million
- □ Finalize a Direct Public Offering (DPO) via a US OTC listing in H1 2023
- Build an <u>ESG-focused</u> exploration, development, production, and final closure & site remediation strategy for the <u>rare and high-grade La Cobaltera cobalt / copper project in a proven district</u> with an infrastructure advantage and past-producing mines
- Expand and upgrade resources and reserves, produce an NI 43-101 compliant PFS / DFS
- Evaluate <u>potential for near-term production</u> from historical tailings dumps across property
- Evaluate mining technology offerings and partnerships to support La Cobaltera's development
- Establish strategic relationships / off-take partners / institutional investor partners
- □ Finalize plant construction and operate a <u>primary high-grade underground cobalt mine</u> with a production target of 2,500-3,000 tonnes per year with copper byproducts
- □ Pursue <u>further downstream integration</u> for in-country value-added development
- Evaluate additional strategic and accretive business development opportunities in critical metals

### La Cobaltera Project Overview



- District-scale opportunity: C3 has 2,635 hectares of 100% owned, unencumbered mining property (in addition to a ~1,350 ha adjacent land package that was recently negotiated via option agreement which will substantially consolidate the District) in Chile's #1 cobalt-copper district, the San Juan District, where high-grade cobalt was mined and processed until the 1940s
- Top-tier jurisdiction: Chile is one of the world's top mining jurisdictions and is the #1 copper producer, as well as a large producer of lithium, molybdenum, gold, silver, and more; existing Free Trade Agreement in place with the US
- □ **ESG focus:** C3 will actively apply global leading ESG standards and practices from exploration and development into production and final end-of-life mine remediation and site restoration
- Primary cobalt project: Cobalt as the primary metal + copper byproducts, focused on high-grade underground mining potential
- □ Favorable geology with infrastructure advantage: A lowaltitude property near the coast with excellent regional infrastructure, validated by previous and ongoing exploration work including the district's first large-scale drilling campaign



### Capital Structure & Raise Terms



- □ Clean capital structure
- One share class with low fully-diluted share count
- Zero debt and low cash burn
- □ Current cash balance of USD ~\$800,000
- □ USD \$5 to 7 million private placement
- □ Target close: November 2022
- Use of proceeds:
  - Exploration program to define exploration / development target prioritization across district
  - Further installment payments to fulfill option agreement of recently negotiated ~1,350 hectare land package adjacent to existing acreage
  - □ Additional metallurgical work
  - Ongoing environmental studies



C3 is an innovator and leader that strives to be the most responsible supplier of critical mineral resources for the development of advanced materials and cleaner energy technologies that address the most pressing environmental and development issues.

# **Sustainable Mining**



### C3 has a deliberate focus on building a dynamic and sustainable business across environmental stewardship, social engagement, and corporate governance

C3 is dedicated to actively supporting achievement of the UN Sustainable Development Goals

### **Environmental Stewardship**

C3 commits to holistic and integrated resource stewardship (materials, water, energy), preservation and conservation of biodiversity, and pollution prevention

#### **Social Engagement**

□ C3 engages all stakeholders in open dialogue and with mutual respect to ensure project development and operations are mutually respectful and beneficial

#### **Corporate Governance**



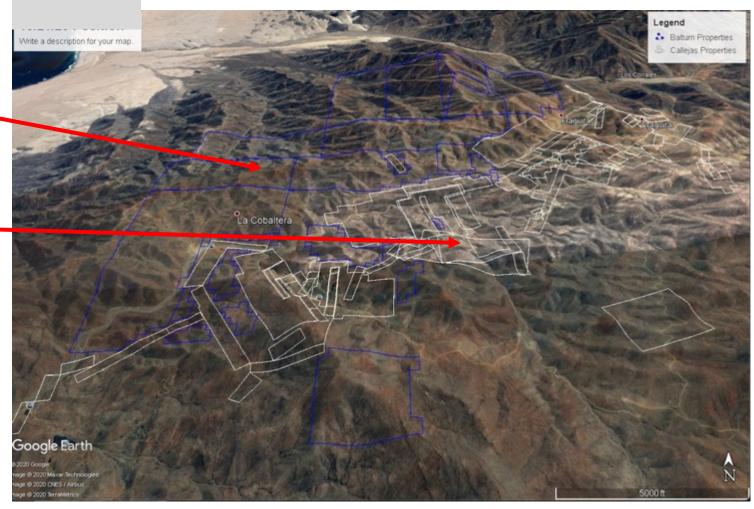
C3 holds ourselves accountable to the highest ethical standards; tracks and discloses operational data according to leading ESG reporting standards to ensure it meets stakeholders' needs for materiality, consistency, and comparability; and communicates transparently to build trust and ensure fairness, accountability, and responsibility in all company activities

### Historic San Juan Cobalt District



- C3's La Cobaltera project is located in northern Chile, about 48km south of Huasco, in the Huasco Province, Atacama Region
- Current land package held by C3 / Baltum Minería (local subsidiary) is -2,635 hectares of 100% owned, unencumbered claims
- Recently negotiated option to purchase an additional ~1,350 hectare adjacent land package, which will substantially consolidate the District
- Region has a track record of highgrade cobalt veins from 1844 to 1944 through artisanal and small-scale mining projects with <u>cobalt grades</u> ranging from 1.3% to 15.8%
- Numerous past-producing open pit and underground mines identified, and historic flotation plant and processing facilities located in the District

La Cobaltera Project



## San Juan: Top Cobalt District in Chile



# C3's land package is located in the prolific San Juan Cobalt District

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### Recursos minerales por Cobalto en yacimientos Chilenos: Mena primaria



Source: CORFO - Cobalt Mineral Resources In Chile, 2017

The Chilean Government identifies the San Juan District as the most promising region for primary high grade cobalt development:

- The Chilean National Service of Geology and Mining ("Sernageomin") and CORFO issued a November 2017 report stating that the <u>San Juan District has cobalt</u> <u>mineralization in veins and mantles, with average</u> <u>concentrations of 1.6%</u>
- Historic mining of cobalt in the San Juan District focused on oxidized secondary ores, with <u>average cobalt grades</u> of up to 6.4%
- Primary cobalt production occurred in Chile between 1844 and 1944, after which cobalt demand fell (post-WW2) and the projects went into private ownership
- Numerous tailings deposits across the district from historical operations present additional primary cobalt production potential

### History of La Cobaltera



### Cobalt production in Chile commenced in the mid-1800s. La Cobaltera is located in the core of the historic San Juan Cobalt District. A brief history of La Cobaltera, and C3 is summarized below:

Chilean Cobalt Production, 1844 to 1941

Period	Kilograms	Co Grade (%)	
1844-1902	5,941,384 -		
1903	284,990 7.15		
1904	124,990	6.00	
1905	28,589	6.83	
1906	3,150	6.00	
1907-1918	-	-	
1919-1923	-	-	
1924	34,588	6.00	
1925	-	-	
1926	6,400	15.00	
1927	2,991	15.75	
1928	10,543	15.81	
1929-1937	-	-	
1938	7,998	9.05	
1939	27,949	11.10	
1940	-	-	
1941	555,522	1.35	
TOTAL	7,029,094		

- Between 1844 and 1902: Artisanal mining of cobalt and copper took place across the District without records
- 1903: Mines at La Cobaltera produced 4,450 mt copper with an average grade of 14%
- □ 1924 to 1941: Intermittent cobalt oxide mining took place
- 1937: Compañía Minera La Cobaltera initiated systematic exploration and mining; built a processing plant to export high-grade cobalt
- □ 1941: Export of high-grade ore containing 1.35% cobalt ore
- 1950 to 1970s: Studies by US Geological Survey (USGS) and others noted secondary cobalt oxide mineralization (erythrite) in veins with grades of 1.6% to 6.4% (D'Aubarede, 1969) and cobalt sulphide mineralization at depth is compromised mostly of cobaltite (USGS)
- 1972: Valdenbenito evaluated the Rosa Amelia historical mine and found oxidized mineralization with up to 0.5% cobalt 30-40 meters below surface, located above deeper cobalt sulphide mineralization
- 1980s 2016: Small-scale miners exploited copper, gold, and silver ore from adits and tailings piles; shipped via truck to Enami's Vallenar plant
- 2016 to current: Chilean Cobalt Corp has consolidated the core of the San Juan Cobalt District, including La Cobaltera; conducted first modern exploration campaign

Source: Hornkohl, 1944

### **Favorable Regional Geology**



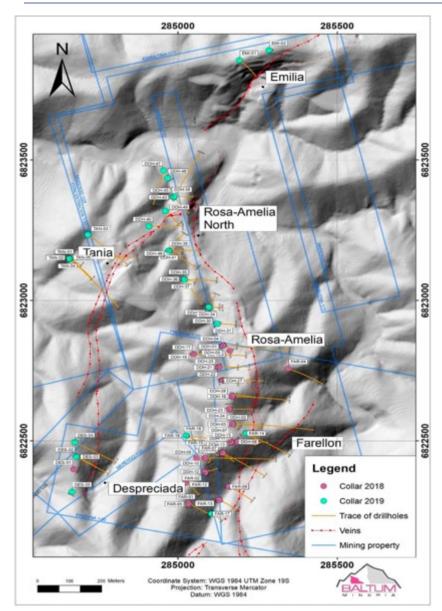
- Despite sporadic mining activity over the past ~200 years, the district has not previously been consolidated or professionally explored using modern techniques until C3's involvement; the first drilling campaign in the district
- Geologically, La Cobaltera appears to be a cobalt-copper epigenetic deposit in metasedimentary rocks
- It is comprised of a cobalt-copper vein system that follows two primary district-scale structural trends with evidence of shallow oxide mineralization and deeper sulfidic systems
- This includes a 20+ km copper trend system with 0.5% to 1% Cu and 0.20% to 0.40% Co with oxide layer depth of 50 meters, transition layer depth of 30 meters, and sulphidic layer depth of 200 to 300 meters
- □ Also includes a 12+ km interlaced cobalt-rich vein system with 0.2% to 1%+ Co and associated Cu credits with vein systems 1 to 10 meters wide (avg is 2.5 meters) and mineralization from surface to as deep as 120 meters



La Cobaltera district High grade copper / cobalt oxide mineralization & historic workings High grade cobalt oxide Visible high grade mineralization

### **District Validation**





# The San Juan District, and C3's La Cobaltera project are validated by the following 3<sup>rd</sup> party sources:

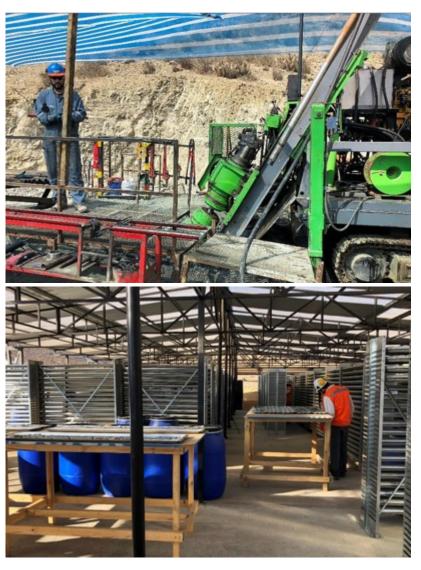
- Historical records of production and data and numerous detailed maps and mine plans from the La Cobaltera area of the San Juan District
- Exploration work by Geoexploraciones (1983) included samples of primary ore rocks from tailings deposits, trenches, and vein outcrops indicated high-grade cobalt
- US Geological Survey reports on three of the veins in the District (Despreciada, Rosa Amelia, and La Negra)
- Recent (until 2016) artisanal production of high-grade copper oxide outcroppings; processed at Enami plants
- A 2017 CORFO report on cobalt mineral resources in Chile identifies the San Juan District as Chile's top cobalt district
- District-wide exploration and development work in 2018 and 2019 with SRK as C3's technical consultant
- Ni 43-101 technical reports by SRK, signed off by a Qualified Person on assessment of C3's exploration and drilling campaign and a maiden mineral resource estimate on the Rosa Amelia mine complex

# C3 / SRK 2018-19 Exploration Program



# During the 2018-19 exploration program, C3 further reinforced the existing validating data with the following work program:

- Review of historical documents, including geological records, maps, and past production accounts
- □ Topography work, visual assessment of vein outcrops
- Trenching to uncover outcrops, samples (surface/depth), XRF (x-ray fluorescence) analysis
- Geophysical surveys (magnetic analysis)
- IP (induced polarization) tests that indicated vein structures at least 300 meters deep
- Drilling program of 96 holes totaling 21,943 meters, including 68 holes totaling 14,022 meters within the Rosa Amelia historical mine
- Geochemical analysis of drill cores
- Computer modeling, geostatistical analysis
- □ Technical Assessment report issued in 2018 and QP approved
- SRK validation and synthetic modeling (using known historical data + recent exploration results for internal analysis) as technical consultant
- □ Initial metallurgical work program completed
- □ Open pit mine design and modeling (30% complete)
- □ Infrastructure (30% complete)
- □ Environmental baseline and hydrological work completed by SGA



## **Exploration & Development Next Steps**



### La Cobaltera Project Opportunities Modeled



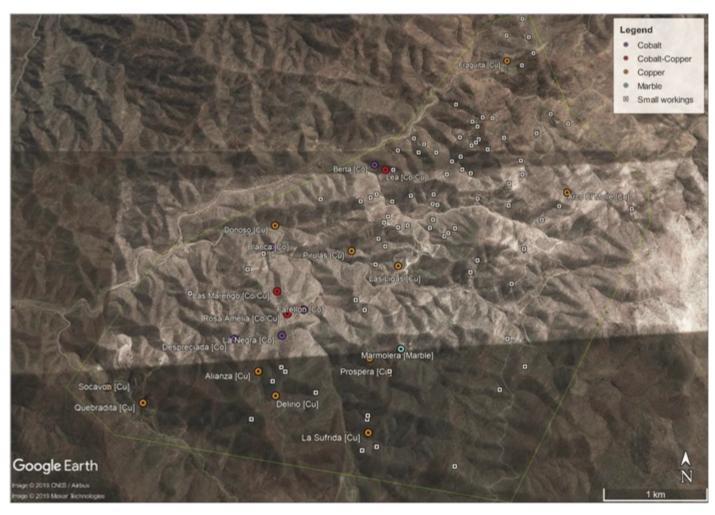
C3 will progress advanced exploration and development of transition zones in parallel with known underground sulphides (cobalt-rich) and consider subsequent exploration and development of known open pit oxides (copper-rich)

- Build upon C3 / SRK 2018 2019 exploration program, including SRK's synthetic modeling of intended development targets at La Cobaltera
- Investigate near-term production potential from historical tailings dumps located across the property
- Continue to explore and evaluate open pit and underground deposits, many of which were historical mining operations
- The Prospera deposit and other recent discoveries in the area represent potentially significant opportunities to develop a high-grade underground mine
- Underground development and brownfield redevelopment opportunities have been evaluated
- Model for open pit mine development starts with mining oxides in Phase 1 along the 20+ km of Cu-Co trends, then mine the transition and sulphidic zones as part of Phase 2

## **Exploration & Development Plan**

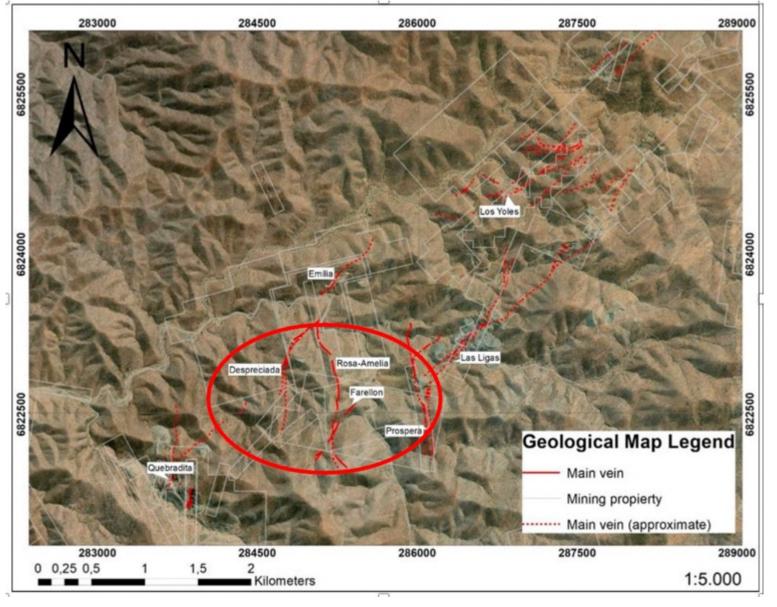


- Execute detailed topography survey to assist with sample locations, drillhole planning, and additional modeling
- Phased drilling campaign targeting potential deeper sulphide resources in areas including Rosa Amelia, Prospera, and Despreciada
- Phased drilling campaign targeting potential oxide resources in areas with the most drillholes divided evenly between Prospera, Las Ligas, Quebraditas, and Los Yoles
- Additional exploration prospects exist across District at depth and along strike
- Continue metallurgical testwork to develop higher confidence in recovery estimates and continue path for required operational permits for follow-up exploration and potential development



Exploration and development has focused on the District's known historical open pit and underground mines

## Exploration Targets: U/G High-Grade Veins



C3's 2018 – 2019 exploration campaign focused on the known underground high-grade cobalt vein systems across La Cobaltera:

CHILEAN COBALT

- Rosa Amelia Low-risk, mid-grade historical mine (0.4% Co); focus of initial exploration campaign; maiden resource estimate published by SRK; additional upside from further drilling to the north and south (intersecting with Farellon)
- Despreciada High-grade historical mine (1%+ Co); evaluated by SRK for potential re-start scenario including modeling
- Prospera Large intercepts found at depths between 250 – 350 meters; mid-grade cobalt (0.2%) and highgrade copper (1-10%)
- Hundreds of other historical underground workings (drifts to surface) across La Cobaltera

### U/G High-Grade Veins



#### Table 10-4: Summary of Significant Intercepts

Vein	Hole ID	From	То	Apparent Width (m)	Cu %	Co %
Rosa Amelia	DDH-02	197.0	203.0	6.0	0.55	0.19
	including	198.0	199.0	1.0	2.63	0.24
Rosa Amelia	DDH-06	235.5	245.0	9.5	0.02	0.57
Rosa Amelia	DDH-12	200.5	202.0	1.5	2.50	0.20
Rosa Amelia	DDH-22	166.0	170.5	4.5	2.65	0.12
Rosa Amelia	DDH-42	15.0	39.0	24.0	0.41	0.07
	including	36.5	38.5	2.0	1.23	0.40
Rosa Amelia	DDH-43	50.5	56.5	6.0	0.16	1.12
Rosa Amelia	DDH-45	106.0	112.0	6.0	0.77	0.04
	including	108.0	110.5	2.5	1.49	0.02
Prospera	PRO-02	347.5	351.5	4.0	0.88	0.03
Prospera	PRO-03	118.5	122.5	4.0	3.82	0.47
Prospera	PRO-05	277.5	298.0	20.5	1.54	0.05
	including	293.0	297.0	4.0	3.50	0.10
Prospera	PRO-05	333.0	364.5	31.5	1.62	0.13
	including	341.5	362.0	20.5	2.35	0.17
	including	342.0	347.0	5.0	6.81	0.32
Prospera	PRO-06	379.3	382.3	3.0	1.33	0.28
Prospera	PRO-08	217.0	222.0	5.0	1.25	0.02
Farellon	FAR-11	228.0	231.0	3.0	0.01	1.09
Emilia	EMI-01	71.0	75.0	4.0	1.41	0.06
Las Ligas	LIG-01	70.0	121.0	51.0	0.30	0.01
	including	99.0	107.0	8.0	0.72	0.03
Las Ligas	LIG-03	107.0	167.0	60.0	0.22	0.01
	including	162.0	165.0	3.0	1.74	0.02
Las Ligas	LIG-04	378.0	380.0	2.0	1.62	0.02
Las Ligas	LIG-06	69.0	89.0	20.0	0.81	0.04
	including	83.0	87.0	4.0	1.49	0.12

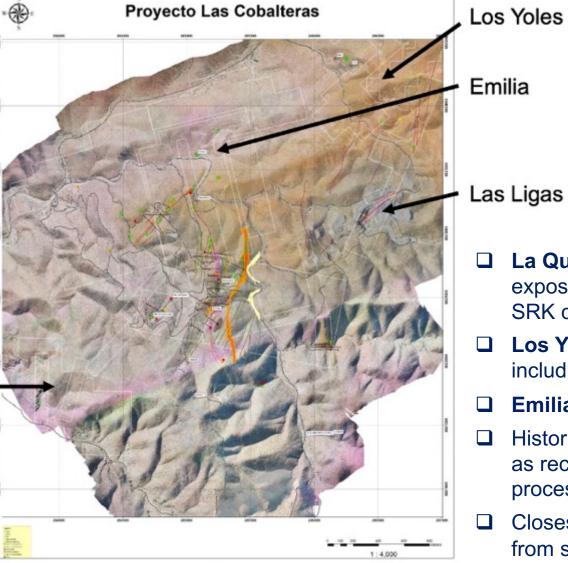
- In 2018 2019, C3 and SRK completed an exploration work program that included focus on the Rosa Amelia historical mine complex (60%+ of drilling)
- Included technical review of historical records (1924 to current), District geological survey and mapping (900 hectares), surface and underground samplings (463 in total), drone aerial magnetometry survey (28.3km<sup>2</sup>), induced polarization (IP) and electrical resistivity (ERT) survey across three cross section profiles (705m in total) across Rosa Amelia
- Rosa Amelia NI 43-101 mineral resource estimate of 139,560 mt ore (0.24% Co, 0.42% Cu) Indicated and 1,086,840 mt ore (0.12% Co, 0.29% Cu) Inferred
- Based on 2018 2019 exploration results Prospera is expected to be initial focus of follow-up exploration
- SRK estimates 10 additional drillholes (400 meters each) to be sufficient to publish NI 43-101 mineral resource estimate on Prospera

### **Exploration Targets: Open Pit Systems**



Many more pits within the area

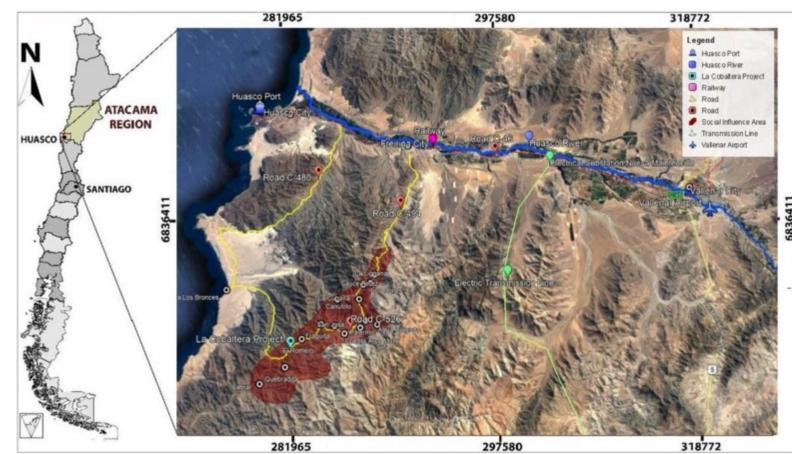
La Quebradita



- There are numerous historical open pit mines across La Cobaltera, including known open pit systems:
- Las Ligas five pits with significant exposure of copper oxides on walls and visible cobalt veins in pit; mineralization extends up to 2km; initial drilling complete + modeling
- La Quebradita two pits with significant areas of exposed oxide mineralization; up to 3km trend; SRK completed synthetic modeling
- Los Yoles four pits with strike up to 6km, including underground workings; no drilling
- **Emilia** one pit along strike; no drilling
- Historical open pit miners targeted copper oxides as recently as 2016 and trucked ore for processing
- Closest copper oxide processing plant is ~70km from site, Enami's Vallenar plant

### Infrastructure Advantage





#### La Cobaltera Regional Infrastructure

### **Strong regional infrastructure provides a significant advantage**

- Chile is a top-tier mining jurisdiction
- □ Low altitude (700m 1,100m)
- Dry and tranquil weather
- Close to the coast (10km), <u>allowing for sea water use</u> or desalination
- Established road infrastructure, only needs small upgrades to connector roads
- Modest power needs & <u>high</u> <u>potential for solar power</u> <u>generation</u>
- Access to ample local labor without a need for a large camp
- Good relations with the regional community; <u>no local communities</u> <u>on site and no relocation required</u>

# **Senior Management Team**





### **Duncan T. Blount – Chief Executive Officer & Director**

- Investor and operator with 15+ years of experience focused on global natural resources
- Former CEO of Decklar Resources Inc and Asian Mineral Resources Ltd; Prior to that, 10 yrs hedge fund experience
- MBA from the Thunderbird School of Global Management; BA in Language & World Trade from Samford University



### Ignacio Moreno – Chile Country Manager & Director

Mining and government relations expert with 20+ years of experience in operations and strategy, including private sector
Former Chilean Mining Undersecretary (2014-2018) and Deputy Development Manager and Board Member at Enami
Economics and Business degrees from Université de Montpellier (France) and Bradford University (UK)



### Jeremy McCann – Chief Operating Officer & Director

- □ Operations and compliance expert with 20+ years of experience in investment management
- Former COO of Schooner Investment Group; BA in Commerce from McGill University



#### Jim Van Horn – Chief Financial Officer

- □ Finance and accounting expert with 20+ years of experience in accounting, audit, and compliance
- Former CFO / COO / CCO of Sigma Investment Management Co; Post-baccalaureate in Accounting from Portland State University; BS in Chemical Engineering from Oregon State University



#### Felipe Quinzio – Chile Administration

- □ Operations and engineering expert with 10+ years of experience in industrial engineering and project management
- □ MBA from Hult International Business School; MS / BS in Engineering from Universidad Adolfo Ibáñez



#### **Greg Levinson – Chairman**

- □ Finance and capital markets expert with nearly 30 years of experience in investment management and market strategy
- Currently, Chairman of Genlith Inc. and a Partner at Blue Horizon Capital; Past CEO of Chilean Cobalt Corp

#### Kevin Russell – Independent Director

- □ Finance and capital markets expert with almost 30 years of experience in capital allocation and thematic investments
- Currently, Chief Investment Officer and Global Head of UBS O'Connor, the bank's hedge fund unit

#### Andy Sloop – Independent Director

- ESG Head and sustainability subject matter expert with over 30 years of experience
- Currently, Global Zero Waste Director at Nike

**Duncan T. Blount – Chief Executive Officer (Senior Management)** 

Jeremy McCann – Chief Operating Officer (Senior Management)

Ignacio Moreno – Chile Country Manager (Senior Management)

The Board and Management Team represent approximately 24% of current C3 shareholders

# C3 Highlights



### 1 Unique district consolidation opportunity in Chile

- ✓ Overlooked opportunity due to ownership structure
- ✓ Multiple historic mining operations in the area
- District is validated by government reports & SRK Consulting
- C3 was the first to professionally explore this area using modern exploration techniques

### 2 High-grade mineralization identified

- Cobalt grades 0.2-1.0%+
- ✓ Copper grades 0.3-2.0%+

3

### Significant historical context

- A robust data set, supported by historical regional copper and cobalt mines with existing production data
- C3's exploration work was focused on resource validation at the district level

District-scale opportunity potential

- Cobalt / copper-rich vein systems
- ✓ Shallow oxide zone with deeper sulphide zones
- Supports phased production and CAPEX approach

### Low-cost production potential

- Robust infrastructure: close to the ocean (10 km), power, roads, local labor force, etc.
- No need for a mining camp; no local communities requiring relocation into project development
- High-grade, polymetallic deposit
- Cobalt and copper oxide deposits near surface; visible outcroppings
- Deeper sulfidic high-grade material with additional potential

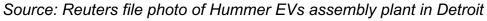


# **Appendix: The Cobalt Market**

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### **Key Points and Concerns**

- High-capacity batteries used in EVs, stationary storage, and many defense applications are projected to have high levels of growth into the foreseeable future
- Currently, there is an insufficient pipeline of exploration and development projects to satisfy this growth in demand for numerous commodities, <u>namely cobalt</u>, which is on the US Geological Survey's List of Critical Minerals
- Despite efforts to reduce demand, it is still anticipated to outpace supply, resulting in higher prices and risks of materials scarcity as demand is rationed
- The current cobalt (and other metal) supply chain is dominated by DRC and Indonesia on the upstream, and by China on the downstream, presenting a <u>unique opportunity for C3's Chilean</u> <u>operations with an ESG focus</u>
- China and the European Union (EU) are leading the US in developing such supply chains, though the US has recently announced a series of funding and strategic support programs that benefit domestic processing, as well as <u>materials sourced</u> <u>from Free Trade Agreement countries, which includes Chile</u>





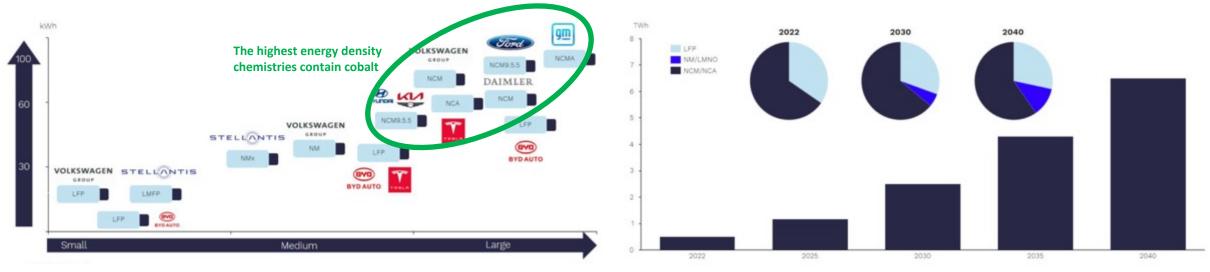


### EV / Battery Market Growth Drives Cobalt



**EV Battery Market Growth & Chemistry Forecast** 

- EV/battery market is the largest single source of demand, and now composes the majority of global cobalt demand
- This trend is expected to continue into the future, as <u>cobalt-containing battery chemistries make up a dominant portion of global lithium-ion battery manufacturing that is either under construction or planned</u>, particularly for larger vehicles with more power and driving range that use higher energy density batteries
- Cathode chemistries with cobalt include NCA (contains ~2kg cobalt), NMC811 (~5kg Co), NMC523 (~11kg Co), NMC622 (~11kg Co), and others



#### **EV** Automaker Battery Strategy by Segment

Source: Rho Motion

### Strong Fundamental Support for Demand

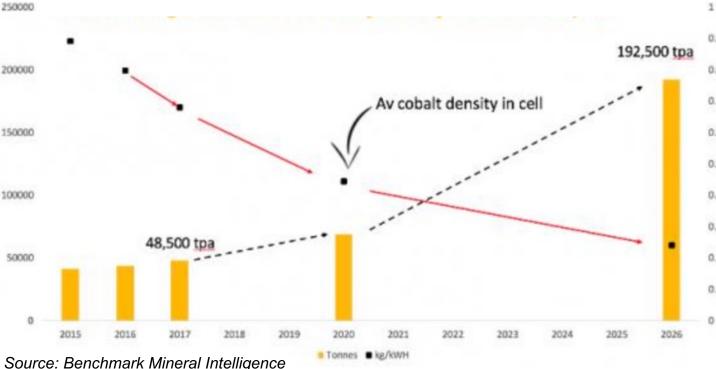
- Cobalt is one of the most expensive, and supply-constrained components of a lithium-ion battery cathode
- Due to this, battery manufacturers have sought to reduce the amount of cobalt in each battery, or eliminate it altogether – though aggregate demand still results in outright market growth
- As an example, The 2009-2012 Tesla models (Roadster & Model S Era) used NCA battery chemistries that contained ~11kg per vehicle. The 2016-2018 models (Model S II & Model X Era) used NCA batteries with ~7kg cobalt. The 2018+ models (Model 3 Era) use NCA batteries with ~4.5kg cobalt
- Despite this 'cobalt thrifting,' total demand is still increasing rapidly

#### Cobalt Demand (tpa) vs Average Cobalt Density in Battery Cells (kg/kWH)

0.9 192,500 tpa 200000 0.8 Av cobalt density in cell 0.7 150000 0.6 0.5 100000 0.4 0.3 48.500 tp 50000 0.2 0.1 2017 2015 2016 2018 2019 2021 2022 2023 2024 2025 2026 Tonnes kg/kWH

### Cobalt usage expected to decrease 60% by 2026 yet demand up 4x

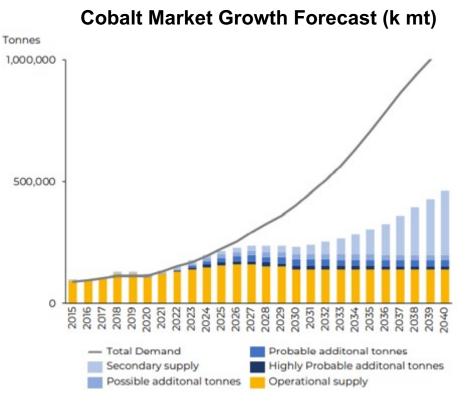


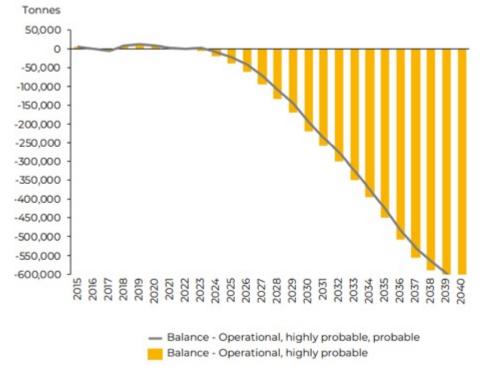


Source: Benchmark Mineral Intelligence

### **Cobalt Market Balance: Deficits Expected**

- Cobalt demand is expected to outpace mined and secondary (recycled) supply by around 2025, with the deficit widening into the 2030s and beyond
- Existing mines are unable to increase capacity to meet this demand, and there is an insufficient pipeline of exploration and development projects to fill this gap





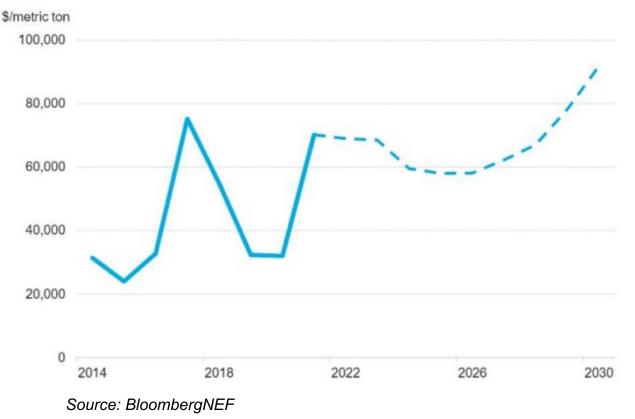




### Cobalt Moving to an 'Incentive Price'



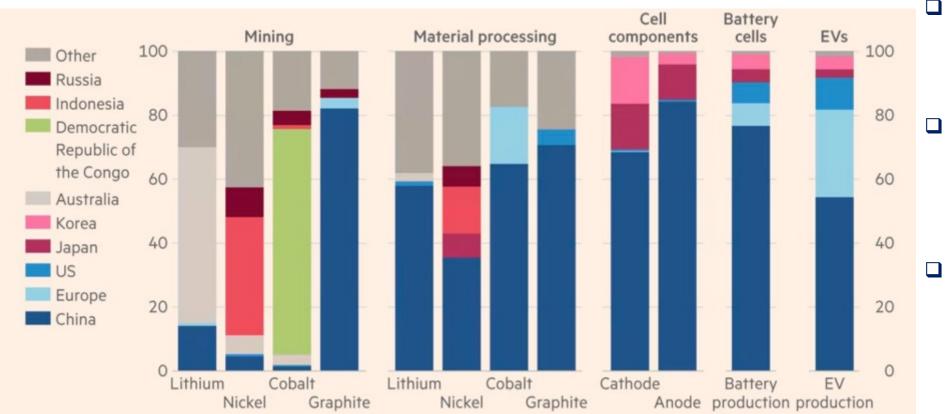
- Cobalt prices nearly doubled in 2021 as a result of the pandemic-related production disruptions and shut-downs, which particularly affected artisanal production
- As these disruptions and supply chain constraints ease post-pandemic, while project expansions in the DRC and elsewhere are completed, prices have moderated
- Despite EV automakers having relative success with their cobalt thrifting, aggregate demand is still growing and is expected to outpace supply
- As a result, prices will move higher to both incentivize new supply and rationalize current demand



#### **Consensus Cobalt Price Forecast**

# EV Supply Chain Dominated by China





#### **Geographic Distribution of Global EV Supply Chain**

Source: Financial Times, IEA

China dominates much of the upstream and almost all of the downstream refining and processing for critical battery materials.

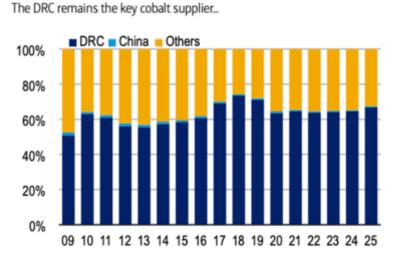
China has excessive control of cobalt and rare earths markets

- This level of market control presents a heightened risk to other global consumers
- China has historically weaponized its controlling market share, particularly with rare earth elements – <u>with</u> <u>other critical</u> <u>minerals also at risk</u>

### Cobalt Production Dominated by the DRC

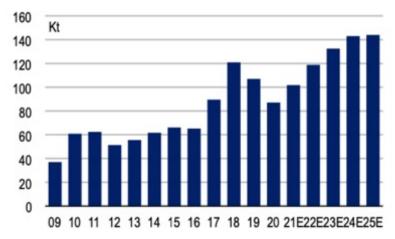


- The DRC dominates historical and current cobalt (Cu-Co) production, with over 70% of world mined supply. Many of these mines are also Chineseowned
- This level of geographic concentration is unprecedented for such a critical mineral
- The DRC is faced with significant infrastructure and logistical challenges, presenting risks to global supply chains
- Artisanal mining, representing upwards of 20% of production, often with forced/coerced labor in unsafe working conditions and degrading environmental practices



#### Cobalt Supply Growth History & Forecast (DRC vs RoW)

... having increased output steadily in recent years





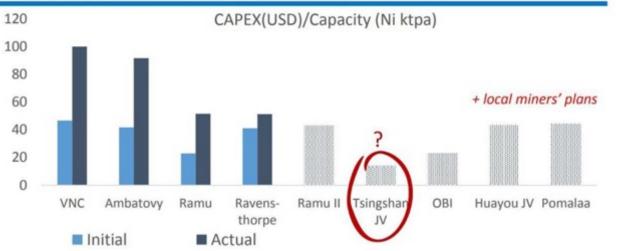


Source: CRU, Bank of America Global Research

### New Ni-Co Projects in Indonesia



#### A Wave of HPAL Projects in Indonesia CAPEX Indications Could be Unrealistic





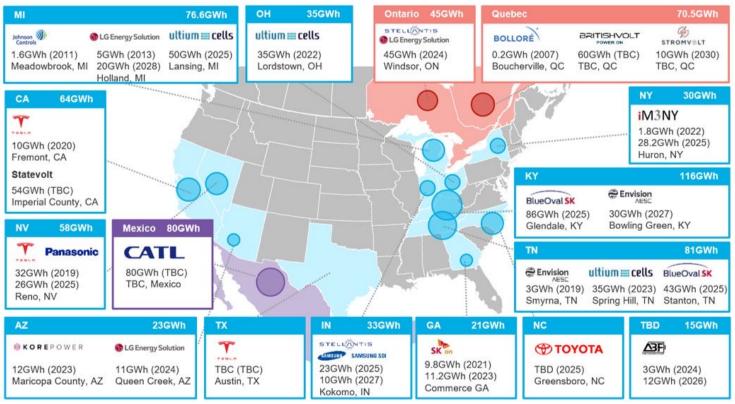
- Indonesia, the world's largest nickel producer, is home to most of the world's cobalt development projects (as byproduct of primary nickel mines)
- Many of these projects utilize a High-Pressure Acid Leach (HLAP) process, which have historically suffered from CAPEX overruns (sometimes as high as 2x original costing) and project delays that threaten the economic viability of these projects
- CO2 intensity for HPAL are 2x or more versus bio leach, concentrate, and other processing methods
- Nickel mining and smelting in Indonesia's fragile coastal ecosystems has resulted in polluted waters (red mud) and disrupted local communities who rely on the area traditional fishing grounds
- Many of the Ni-Co projects in Indonesia are owned by Chinese companies, or are selling material to Chinese processors who have set up capacity in Indonesia – maintaining Chinese market control

Source: Macquarie research, Mongabay

### **Opportunities in Critical Minerals**

- The US is particularly vulnerable with respect to <u>responsible sourcing of cobalt</u>, as it is on the US Department of the Interior's list of critical minerals
- US government agencies have increased focus on reducing vulnerabilities related to critical minerals and their supply chains
- This increase in demand is driven by rising EV market penetration, and the projected growth of EV / battery manufacturing facilities (gigafactories) across the US
- To secure constrained critical minerals such as cobalt, <u>EV automakers and</u> <u>battery manufacturers are signing off-take</u> <u>agreements</u> to ensure certainty of supply, confidence around the material's origin (responsible sourcing), and raw material acquisition at a reasonable price

#### North America's cell manufacturing activity



Source: BloombergNEF. Note: Dates for fully commissioned plants correspond to the data when the last phase was commissioned. Bubble size corresponds to total capacity commissioned, under construction and announced.

CHILEAN **COBALT** 

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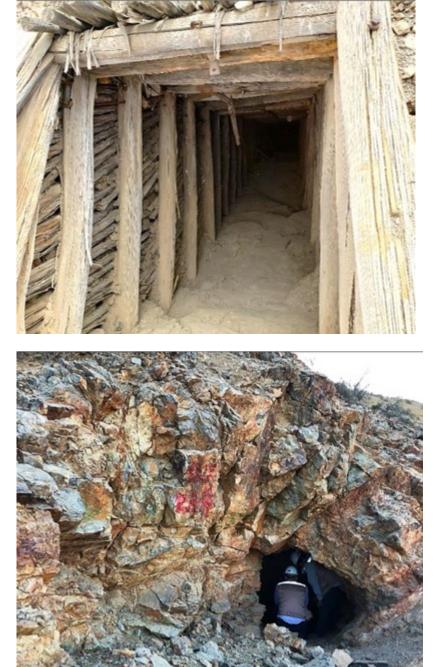


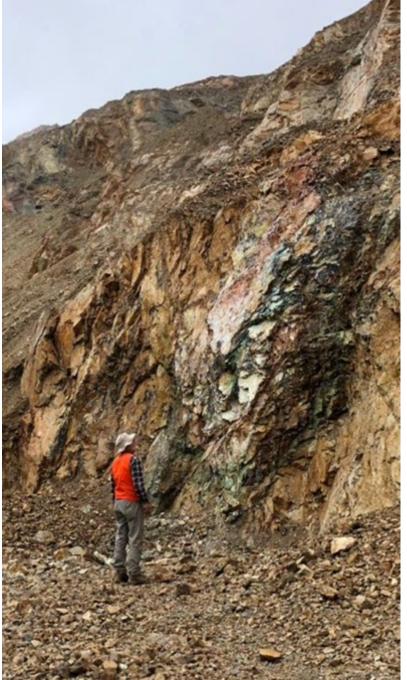
# **Scenes from the District**



















Duncan T. Blount CEO & Director

Duncan.Blount@ChileanCobaltCorp.com