

# HALLGARTEN & COMPANY

## Initiating Coverage

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## Coro Mining (TSX: COP) Strategy: LONG

Key Metrics				
Price (CAD)	\$	0.17		
12-Month Target Price (CAD)	\$	0.30		
Upside to Target		76%		
12 mth high-low		\$0.02-\$0.21		
Market Cap (CAD mn)	\$	82.2		
Shares Outstanding (millions)		483.4		
		<b>FY15</b>	<b>FY16e</b>	<b>FY17e</b>
Consensus EPS			n/a	n/a
Hallgarten EPS (USD)			(\$0.006)	\$0.007
Actual EPS (USD)		-0.01		
P/E		n/a	n/a	23.0
				18.0

# Coro Mining

## In the Vanguard of Microminers

- + Coro has become the up-and-coming copper producer in Chile with a micromining format based upon bargain buys of deposits and kit to reactivate the mines
- + Berta mine (and its Nora plant) is ramping up steadily and should be producing at a run rate of around 4,800 tpa by the end of 2017
- + The Marimaca deposit (and the associated Ivan SX/EW plant) provides the pipeline for future production
- + A just-published maiden resource estimate at Marimaca shows potential for resource expansion
- + Potential for Trump-backed infrastructure build to shift the main driving force for copper prices away from China
- ✗ Copper price movements and stockpiled quantities remain essentially at the discretion of the Chinese

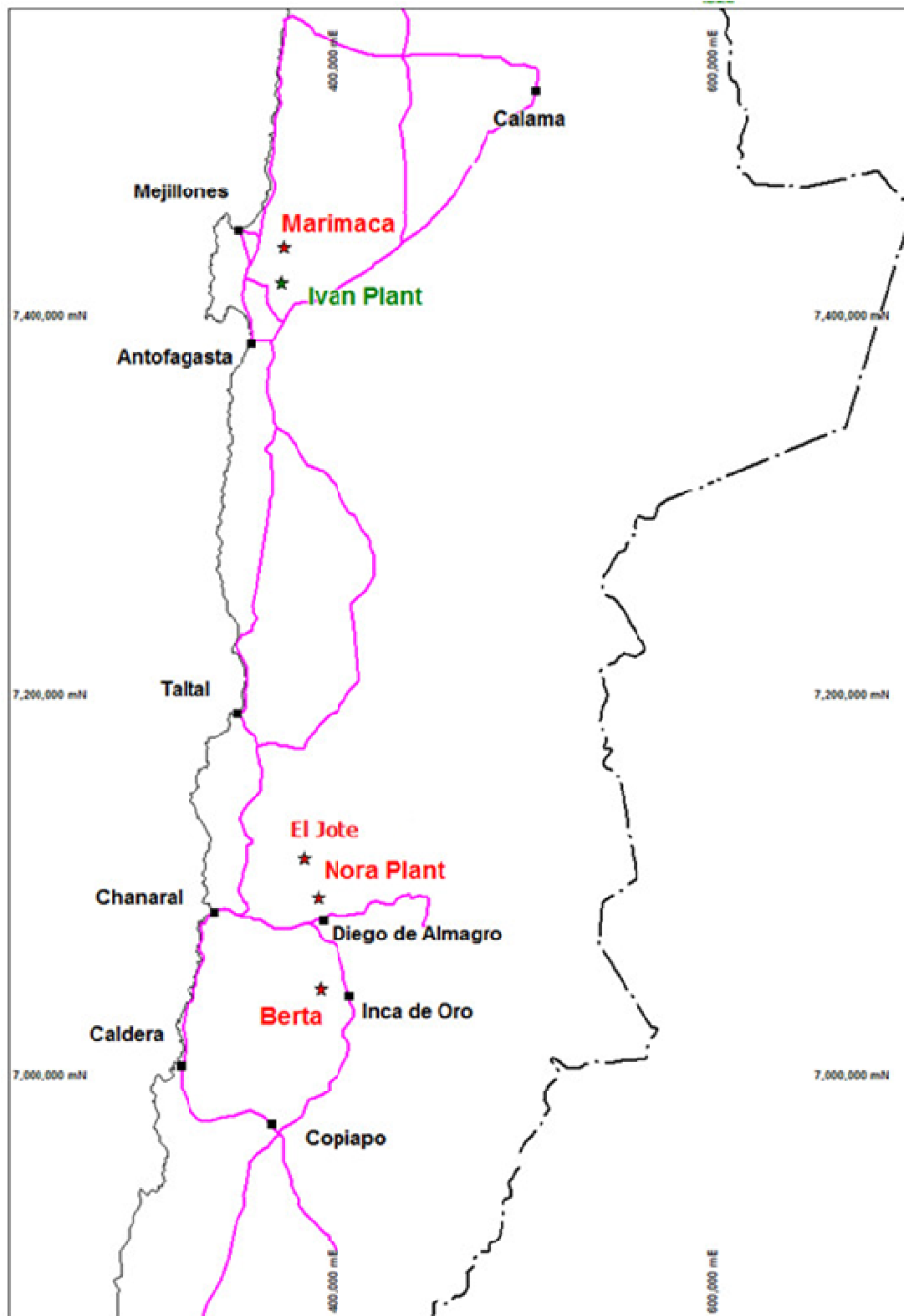
### Scavenging and Scrounging to Production

Microproducers are not just a phenomenon of the tail end of the Great Slump. We believe that they are the new paradigm moving into a base metals recovery (whether “great” or not remains to be seen). Even as gold was recovering, several of the bootstrapped gold producing juniors were seeing strong investor interest because they were providing what the market wanted: production that was turned on with minimum fuss, minimum financing and minimal dilution.

Coro has modelled to a degree its strategy upon that of the AIM-listed Weatherly International (WTI.L) that has been pursuing a similar strategy in Namibia. Coro started its push into micromining, while copper was still mired below \$2 per lb, by corraling together bits and bobs in the Chilean copper sphere to create a rising copper producer, essentially on a shoestring in a dire market. As a result it now has a smartly rising output in a very much healthier copper market and has a major financial backer that lets it get on with it.

The company has a gradualist approach buying first a previously mined deposit, then a redundant plant in good condition, then repeating the process. In both cases the mine has been paired with a nearby plant to create two poles of production (see map on following page) and these two poles are over 300kms apart. Then it kickstarted production and is using funds from the first operation to fund the second.

In this note, we shall examine how this strategy is evolving and where it might lead.



## **The Market Awakes**

We had known the company on its first go around when it was in the orbit of Benton Resources and focused upon a contentious copper project in the Argentine province of Mendoza.

However the company reappeared on our radar in 2015 due to its SCM Berta project (65% held with the balance held by a Chilean engineering group, ProPipe) and the associated remediation and refurbishment of the Nora SX/EW plant, located 5kms north of the town of Diego de Almagro in the III Region of Chile.

In the first half of 2016 the market suddenly awoke to the possibilities (and the reality) of production and boosted the stock, in mid-April, by over 300% in a matter of days.

## **SCMB – the Foundation Stone**

The structure through which the first production has been organized is SCMB (Sociedad Contractual Minera Berta S.A.) which owns the Berta copper deposit, the Nora SX/EW processing plant, and has an option to acquire 100% of the nearby Salvadora exploration project. The Nora facility was acquired in September 2014 from the receivers of the previous owners for approximately US\$3.3mn. It had initially been built in 2009 and was closed in 2012. Remediation was required to lift the Nora plant suspension order.

Since early 2016, the Nora plant has been treating material from a variety of dumps from the surrounding district, but as of August, it has been exclusively processing material derived from test mining of high grade material selectively mined from shallow pits at the Berta deposit itself.

As such, the operation has not yet reached commercial production, with delays in receiving operating permits for the Berta site contributing to its inability to do so. These are finally expected to be received in Q1 2017 and SCMB will now proceed to install crushing and leaching facilities at the Berta site. This will enable concentrated pregnant leach solution ("PLS") to be trucked to Nora which will be expanded to 5,000 tpa cathode capacity. The installation should be completed by March 2017.

## **The Berta PEA**

SCMB completed a PEA on the Berta Deposit as an open-pit mine in June 2015 and planned to truck high-grade material from Berta to Nora for the first eleven months of operation. Concurrently, the Nora plant capacity is being expanded from 3,000 tpa to 5,000 tpa of copper cathode and a crushing circuit, agglomerator and leach pads are being installed at Berta with transport of PLS, water and raffinate between Berta and Nora via a pipeline.

The Updated PEA was announced in mid-June 2015 and the estimated resource was:

- In-pit Measured and Indicated Resources of 17.6mn tonnes at 0.37%CuT at a cutoff grade of 0.1%CuT

- Measured Resources 14.1mn tonnes at 0.38% CuT
- Indicated Resources 3.5mn tonnes at 0.29% CuT

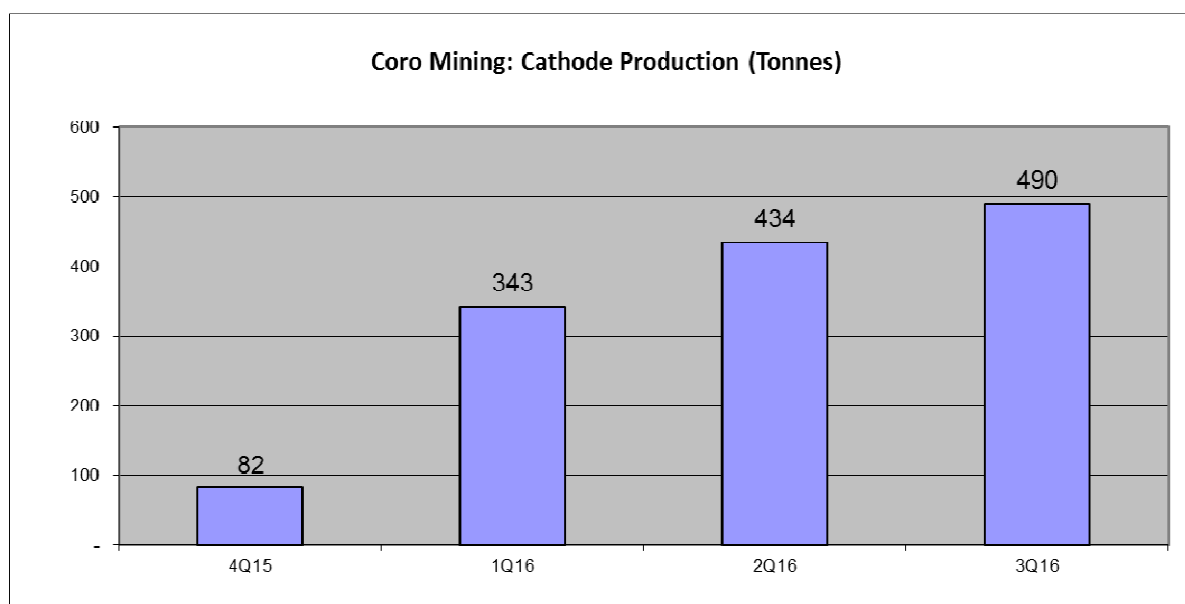
Elaborating further it said that there was:

- High-grade trucking material 0.4mn tonnes @ 0.83% CuT for 2.7k tonnes of copper cathode production
- Heap leach material 6.8mn tonnes @ 0.56%CuT for 29.5k tonnes copper cathode production
- Dump leach material 5.9mn tonnes @ 0.20%CuT for 5.3k tonnes of copper cathode production
- Total copper production of 37.8k tonnes of copper cathode production
- Waste of 5.3mn tonnes
- Life of mine strip ratio of 0.54:1
- Mine Life of 8 years

Berta is nobody's idea of a super-pit. It is a throwback to the times when mines were smaller and made money. The management team is following all the steps that miners did in that by-gone age. There is no real reason why it should not work again in current times.

### Production Ramp-up

In the trailing twelve months SCMB has produced 1,349 tonnes of copper cathode and has not yet classified this as commercial production. The current capacity of the plant is around 250 tpm, but it has only been operating at around 52% of this capacity due to start up and commissioning activities in Q1 2016 and less than expected production from non-Berta dump material in Q2 2016 due to recovery issues. The Nora plant has not yet met break-even thresholds, but this improved in Q3 2016 when SCMB shifted to production from Berta material.



The expansion of the Nora plant from 3,000 to 5,000 tpa of copper cathode is substantially complete

and the Coro's management decided to accelerate the installation of the Berta leach pads and crusher in order to capitalize on the currently favourable capital cost environment and to reduce the operating costs of processing Berta materials.

The goal during the latter period of 2016 while copper prices remained depressed was to reduce opex. The weak copper price in most of 2016 was offset by declining oil and acid prices and the favourable Chilean peso exchange rate movements. The company has been helped in reducing capex by the enhanced equipment availability and lower pricing caused by a near cessation of new mining projects in Chile and elsewhere.

The installation of new crusher and leach pad facilities at Berta is planned for completion by March and this will allow the trucking of PLS to the expanded Nora plant. Coro should then be able to declare commercial production and ramp up to its design capacity of ~400tpm. At that time, Coro management also expects to have received the final outstanding site operating permits. The company will then release a new production schedule and reserve statement, together with actual and projected operating costs, as an update to the now obsolete PEA.

SCM Berta produces and sells cathode copper to an offtaker. The terms of this agreement are confidential at the request of the buyer but involve them paying a price dependent on the grade of the copper, which in turn is a function of the level of impurities, if any.

As for resource expansion at Berta, drilling has further defined the higher grade cores of the Berta Sur and Central deposits as highlighted by oxide intersections of 56m @0.73% CuT from surface in BD-02 and 60m @1.09% CuT from 10m depth in BD-05, respectively. It will be interesting to see how this pit and mine develop as mining progresses.





### **Marimaca – Hot on the Heels of Berta**

The Marimaca project is located in the II Region of Chile. It is 14km from the highway and powerline, 22km east of the port of Mejillones and one hour from the major mining centre of Antofagasta. Coro is earning a 75% interest with the residual 25% is held by a Chilean family. This project is essentially a repeat of the experience at Berta. Buy a past producing mine and acquire some recently used equipment and bolt together a production plan.

### **The Marimaca Deal**

Coro has the right to earn a 75% interest in the property as follows;

- 51% interest earned in Marimaca with a \$125k payment and the completion of a NI43-101 resource estimate and engineering study that demonstrates the technical and economic feasibility of producing a minimum of 1.5k tpa Cu cathode by August 6th 2018 at Coro's cost
- Additional 24% interest in Maramaca earned by Coro upon obtaining financing for the project construction
- The owner's interest will comprise a 15% interest free carry to commencement of commercial production and a 10% participating interest subject to dilution. The owners at their election may request Coro to loan them the equity portion corresponding to their 10% interest, if any, recoverable by Coro from 100% of the project's free cash flow after debt repayments

### **The Strategy**

At Marimaca the strategy is to use a second-hand SX/EW plant to kick start production. To this end, in August 2016 Coro signed a non-binding Letter of Intent to acquire Minera Rayrock Ltda from the Peruvian miner, Minera Milpo. Rayrock is the owner of the Ivan SX/EW plant (pictured at right) located around 18km to the south of Marimaca. This plant has installed capacity of 12k tpa copper cathode and



operated from 1995 until 2012, but this is now on care & maintenance. The transaction also brought along the associated water rights and environmental and operating permits, some of which require updating.

Interestingly, the Ivan operation was originally established by Glamis Gold, and was acquired by Minera Milpo in 1999 for \$21.1mn.

### **The Rayrock Deal**

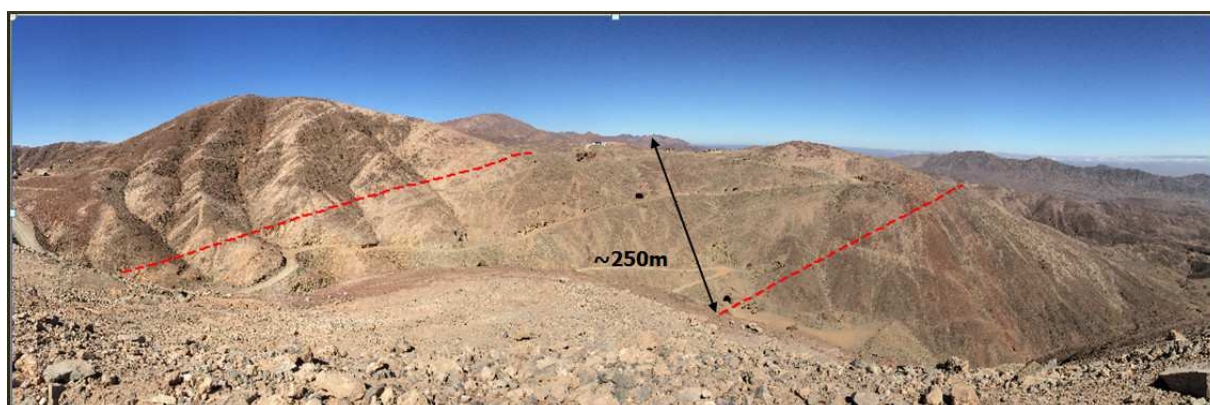
The total purchase price is \$6.5mn of which \$0.25mn was paid to ensure exclusivity. Coro has now completed its due diligence on Rayrock and anticipates closing the transaction in the near future.

The Rayrock deal also includes the 38,283 hectares of mineral claims that it owns. Milpo retains a 2% NSR on all production from the Rayrock mineral claims. Coro may acquire half the NSR for US\$2mn at any time and will have a right of first refusal over the NSR.

### **The Geology**

Marimaca is located in a belt of Mesozoic age copper deposits known as the Coastal Copper Belt, which range in (pre-mining) size from Mantos Blancos ~500mt to Ivan ~50mt. They occur in a variety of host rocks and have differing morphologies, but have a common Cu-Ag primary mineralogy zoned from bornite outwards to chalcopyrite and pyrite, deep oxidation and frequently, secondary enrichment.

The Marimaca deposit (shown below) is hosted by Jurassic age coarse grained dioritic rocks. Primary mineralization at Marimaca consists of hairline to centimetric veinlets of chalcopyrite-magnetite with accompanying strong potassic alteration; very little disseminated sulphides have been noted. Subsequent deep oxidation and remobilization has taken place and the deposit is now an oxidised enrichment blanket with the distribution and grade of copper mineralization controlled by fracture density.



The Marimaca property contains a number of NNE-SSW trending, ~60° E dipping, broad shear zones, cross cut by later NE-SW oriented sub vertical feeder structures. The intersection of these structures has

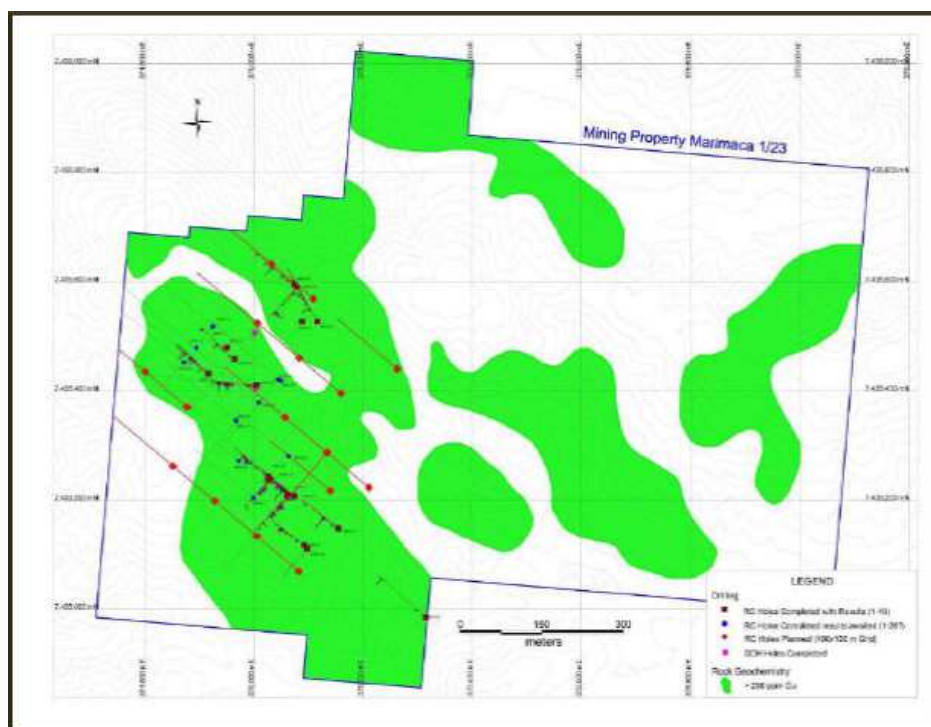


produced wide NW-SE oriented zones of eastward dipping mineralization that have been exploited from a series of open cuts and small underground workings by artisanal miners. Surface mapping and drilling has shown that the mineralization is comprised of multiple, thick, higher grade structures bordered by lower grade halos.

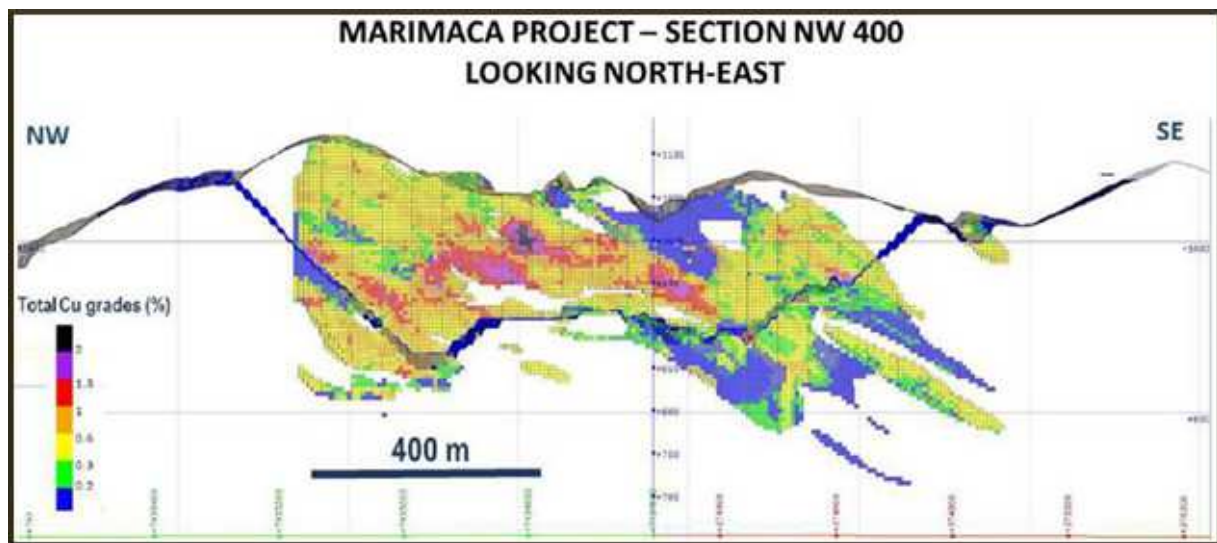
### The Marimaca Resource

In the first weeks of the current year the company published its long-anticipated resource estimate on the Marimaca deposit. The estimate was completed at a variety of cut off grades by NCL Ingeniería y Construcción, based in Santiago in Chile, and released in January 2017. It is important to note that in preparing this resource the company's main goal was to prove that there was sufficient feed for Ivan "as is". To this end it came up with a resource to prove that thesis. Its next task will be to do the extra work to prove up the expansion potential and to that end closer drill spacing will be required.

The map below shows the concession area with the main resource target over to the left side. It is because of this that the resource (and the pit-shell designs) are constrained as we shall discuss anon.



As part of the resource calculation process a number of Whittle pit optimizations were completed utilizing appropriate operating costs, results obtained from preliminary metallurgical test work, and a variety of copper prices.



The resources were estimated only for oxide and mixed copper mineralization, which can be processed by heap leaching and run of mine (ROM) leaching to produce cathode copper. No resources were estimated for enriched and primary sulphide mineralization, occurring in deeper portions of the deposit.

The table below shows the total resource and then the pit-constrained resource (all heap-leachable) utilizing a \$3.20/lb long term copper price. In terminology, CuT means total copper and CuS means acid soluble copper.

Marimaca Resource													
	Measured				Indicated			Meas + Ind			Inferred		
	Cut Off	kt	%CuT	%CuS	kt	%CuT	%CuS	kt	%CuT	%CuS	kt	%CuT	%CuS
Total Resource	0.2	5,453	0.74	0.58	16,833	0.65	0.48	22,286	0.67	0.51	26,979	0.49	0.35
Pit Constrained	0.2	5,301	0.74	0.59	16,198	0.66	0.49	21,499	0.68	0.51	18,769	0.53	0.39
Contained Cu		kt CuT	kt CuS		kt CuT	kt CuS		kt CuT	kt CuS		kt CuT	kt CuS	
		39.4	31.0		106.1	79.4		145.5	110.4		99.3	72.8	

The pit resource is constrained by the tight Marimaca property limits, such that all blocks occurring outside the property were assigned a 0%CuT grade. The Chilean mining code permits sufficient push back of pit walls onto adjacent properties to allow for the extraction of resources present on the property. The pit contains a total of 54,436kt of waste, including mineralized blocks that did not fall into a resource category; low grade ROM material; and blocks outside the property limits, for an overall strip ratio of 1.31:1.

In its release the company stated that there was an additional potential mineralization of around 20mn tonnes that had been identified during the modelling which could not be classified as a resource, based on the currently available drill hole information.

It should also be stressed that this is a maiden resource with the current drill spacing resulting in a significant tonnage of mineralization that fell into the Inferred category or that could not be categorised as a resource. Coro intends to complete the acquisition of Rayrock and continue the expansion and further definition of the Marimaca deposit. The resource estimate will form the basis of a feasibility study, which shall start work in the near future.

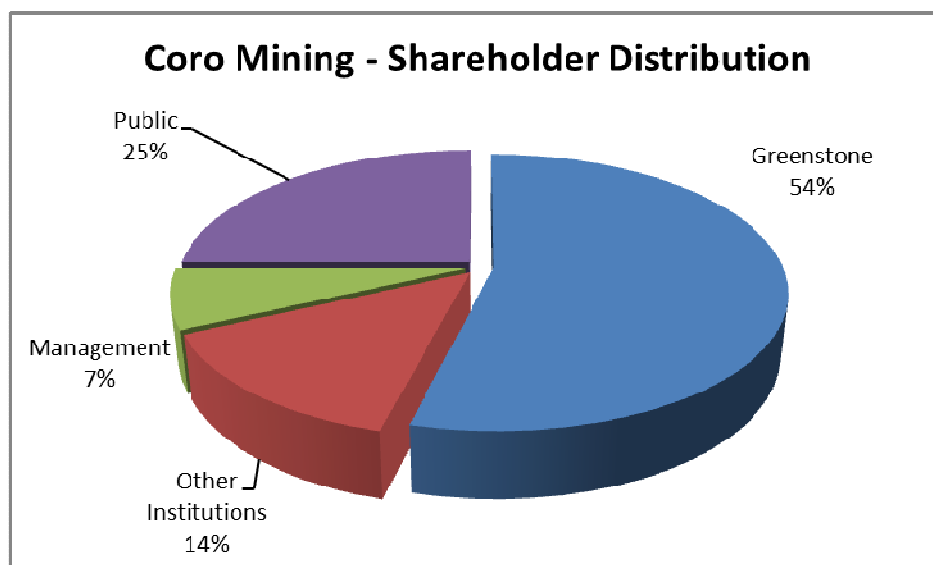
### Financing

In mid-December the company closed a non-brokered private placement financing of 37,522,859 common shares, at a price of CA\$0.14 per common share, raising gross proceeds of approximately CA\$5,253,200. The proceeds will be used to build out the Berta facilities and for further exploration of the Marimaca project. Greenstone Resources L.P. acquired 29,825,874 common shares in the Private Placement and as a result now holds approximately 55.9% of the Coro's outstanding common shares.

### Greenstone

The latest deal has pushed Greenstone's stake in Coro from 54% to 55.9%. Greenstone is a friendly UK-based private equity group that was founded in 2013 that invests in companies with small to medium sized projects approaching production. The two senior partners are one with a background at JP Morgan and another with RTZ and Xstrata. They have been immensely supportive of strategy and advancing funds for the company to move ahead when bargain buys have become available.

Greenstone appointees hold 2 of the six directorships on the Coro board.



## Coro Mining

(Dec-end FY) in Millions of USD

	FY18e	FY17e	FY16e	3Q16	2Q16	1Q16	FY15	4Q15	3Q15
Total Revenue	32.80	26.55	0	0	0	0	0	0	0
Cost of Revenue	21.65	17.52	-	-	-	-	-	-	-
Gross Profit	11.15	9.03	-	-	-	-	-	-	-
Selling/General/Admin. Expenses	2.48	2.15	1.62	0.563	0.271	0.217	0.95	0.20	0.21
Exploration	1.40	1.32	2.769	1.157	0.549	0.113	0.10	0.06	0.094
Depreciation/Amortisation	0	0	0	0	0	0	0.01	0	0
Interest Expense (Income)	0.34	0.12	-	-	-	-	-	-	0.108
Other Operating Expenses	0	0	0	0	0	-	0.10	0	0
Total Operating Expense	25.87	21.11	4.389	1.72	0.82	0.33	1.15	0.26	0.333
Operating Income	6.93	5.44	-4.389	-1.72	-0.82	-0.33	-1.15	-0.26	-0.23
Gain (Loss) on Sale of Assets	0	0	0	0	0	0	0.36	0.2	0
Income Before Tax	6.93	5.44	-4.389	-1.67	-0.96	-0.05	-1.12	-0.27	-0.37
Tax	1.66	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Income After Tax	5.27	4.13	-4.389	-1.67	-0.96	-0.05	-1.12	-0.27	-0.37
Minority Interest	1.84	1.45	-1.54	0.02	0.01	0	0.01	-0.01	0.02
Net Income Before Extra. Items	3.42	2.69	-2.85	-1.65	-0.95	-0.05	-1.11	-0.28	-0.35
Ordinary Shares on Issue	483.42	483.42	483.42	400.38	379.93	239.17	159.37	159.37	159.37
Basic Normalised EPS	0.007	0.006	-0.006	-0.004	-0.003	0.000	-0.007	-0.002	-0.002
Copper Cathode Production (tonnes)	4,800	3,950	1,847	490	434	343	82	82	
Copper Cathode Sales (tonnes)	4,800	3,950	1,828	470	425	393	0	0	
Copper Price Estimate (USD/lb)	\$3.10	\$3.05	\$2.33	\$2.45	\$2.33	\$2.33			

## Latest Results

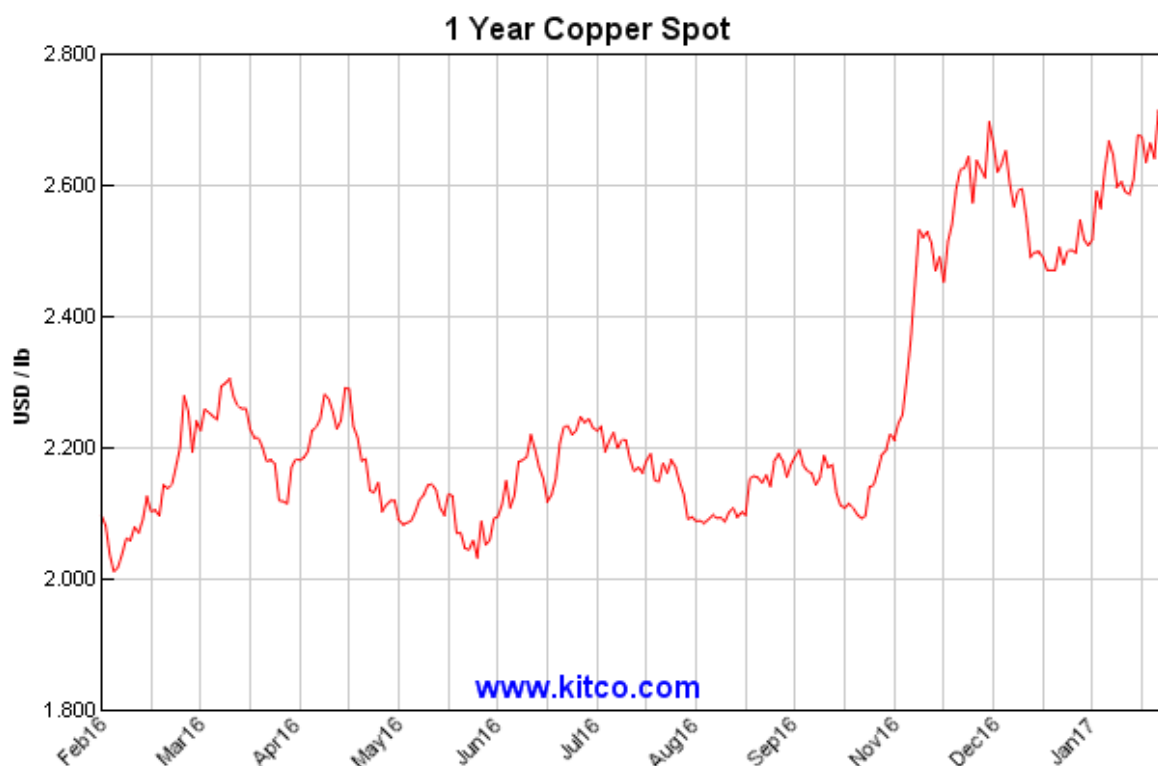
The profit & loss table on the preceding page shows the recent results evolution and our projections for FY17 and FY18. These represent a broad approximation as the potential for economies of scale to boost these numbers higher will remain conjectural until commercial production is declared. In our estimation, the company should swing to a positive bottom line in FY17. We are not factoring in production from Marimaca/Ivan but in reality this could be a genuine possibility in the second half of FY18.

Investors should not be surprised to receive a dividend cheque from FY19 onwards.

## Copper – Back with a vengeance

The red metal has spent much of the last five years wandering in the same vale of misery as the other base and specialty metals. Copper had the added woe that producers were not willing to substantially cut output (unlike in Zinc) and an overlay of fairly thinly veiled Chinese manipulation of prices and perceptions.

As other base and specialty metals lifted off in 2016, copper was most definitely a laggard, only starting to find its feet in the last quarter of the year as the chart below demonstrates.



However with a startling rapidity copper staged a major catch up and has held its gains well in recent weeks. The latter part of the rise was prompted by the potential of copper as an infrastructure metal



under the nascent Trump regime however the initial spurt in October appeared to be pure catchup as some serious short positions were closed out and as users/stockyards that had been long and refrained from buying found their stocks at low levels.

### **Board & Management**

**Gordon J. Fretwell** is the Chairman and an independent Director. He graduated from University of British Columbia in 1979 with his Bachelor of Laws degree. Since that time, Mr. Fretwell has been a practicing solicitor in Vancouver over the last 25 years, primarily in areas of resources and securities law. In addition, He is a Director or Officer of various publicly traded companies including Northern Dynasty Minerals, Asanko Gold and Auryn Resources.

**Alan Stephens** is the President, Chief Executive Officer and a director. He is a graduate of the Royal School of Mines, Imperial College, University of London, with over 39 years of international mining experience. He has lived and worked extensively in Chile, Mexico and Brazil. Before co-founding Coro, He was Vice-President of Exploration for First Quantum Minerals Ltd., and he spent ten years with Cyprus Amax Minerals Company managing exploration teams in Latin America, Africa, Europe and Asia. He is a Fellow of the Society of Economic Geologists (US) and of the Institute of Materials, Minerals and Mining (UK). He was also Director and Chairman of Valley High Ventures Ltd. from March 2008 to March 2011. Mr. Stephens is also a qualified person for the purposes of NI 43-101.

**Rod Webster**, is a non-executive director. He has more than 40 years' experience in the resources industry, including more than 20 years in executive positions. Mr. Webster is a Fellow of both the Australian Institute of Mining and Metallurgy and the Australian Institute of Company Directors, and he is currently Chief Executive Officer of Weatherly International PLC. Prior to that role, he was a senior executive of First Quantum Minerals Ltd., responsible for the development of the Kansanshi mine in Zambia. Mr. Webster was also the founding Director and Chief Executive Officer of Western Metals Ltd.

Michael Haworth, a director representing Greenstone Resources, a private equity fund specialising in the mining and metals sector. The Greenstone team has over 80 years of experience in the sector covering all aspects of mining project development.

**Colin Kinley** is also a non-executive director. He spent 26 years with the leading driller, Layne Christensen Co, (LAYN-Nasdaq) as a Senior Executive responsible for Energy Operations, Specialized Drilling, Mining Technologies and Remote Site operations. For the past eight years Kinley has been CEO of Kinley Exploration, a resource industry integrated project management company operating internationally. Kinley is currently a Director of Excelsior Mining Corp. (MIN TSX.V), is COO, a founder and Director of Eco Atlantic Oil and Gas (EOG TSX-V) an E&P company exploring oil offshore Africa, and is Founder and CEO of Jet Mining Corporation Australia.

## Risks

The risks associated with Coro are rather plain vanilla compared with many other start-ups these days. Country risk is virtually eliminated by operating in Chile which is the copper destination par excellence.

- ✗ Copper price weakness
- ✗ Financing difficulties
- ✗ Inability to expand resource(s)

Copper prices could be said to be in the “lap of the gods” but the copper gods consist of China and pretty much no-one else. The current rise looks more like a belated catch-up with metal price reflation rather than a speculative ramp which is fundamentally a good thing. We would not worry about a serious pull back until the price breached \$3.20 per lb.

Financing seems set for now with cashflow likely to fund further incremental expansion. The story getting more traction with the wider investor universe will allow the company to reduce the Greenstone dominance over time.

With significant territory at all its sites and beyond the risk of running out of ore to process is an unlikely one at this time.

## Conclusion

Coro is certainly a pioneer. Is there another company out there that styles its approach as “austerity-driven development”. After five years of brutally tough markets it seems it is one of the very few to have learnt the lessons of the downturn, while others blithely break into song “ Happy Days are Here Again”. Coro has realized that there has been a sea change and adapted to the new ecosystem in which miners have to live and only with that realization can they move forward and thrive.

It is still early days at Coro but the product is flowing and it’s already putting together the components of project number two and beyond. Fortunately the copper price is coming to the party as well. As noted we can see the copper price breaking through the \$3 per lb level in 2017 though would be dubious of it sustaining a move beyond \$3.50. In any of those circumstances Coro is a winner.

Coro also benefits from scarcity value with the potential access to Chilean copper mining in smaller scale names being really only Coro and Amerigo Resources (which reprocesses tailings exclusively). In an age of copper giants (most of which are not adding capacity) the copper producing junior is a rare beast.

Despite the ravings of gold bulls promoting their favorite moose pasture do-nothing junior, this market is still intensely focused on production, production, production. Added to that copper has become sexy again due to its virtues as an Infrastructure Metal in the Age of Trump. Coro scores on both of those fronts with an over-arching parsimony in its project acquisitions and development which is always admirable in our estimation.

Wednesday, February 8, 2017

In the age of the microminers, Coro is proving itself to be one of the Best in Class and therefore we have a **Long** position in Coro Mining in the Model Mining Portfolio and reiterate our 12-month target price of CAD\$0.30.



## Important disclosures

I, Christopher Ecclestone, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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