

# Green Swan strikes cobalt (and gold!)

Green Swan Capital Corp.(TSXV: GSW) is a Canadian mining company operating in the world-renowned Sudbury Basin in Ontario. Green Swan is well-poised to deliver real value to shareholders as it completes its first exploration program involving surface samples, clearing and a 300 metre diamond drill program where it observed visible gold. Management has been here before.

The Sudbury Basin is the second oldest known impact craters on Earth, containing resulting metal deposits that made the Sudbury area one of the world's largest suppliers of nickel and copper, alongside which cobalt is commonly produced. Roughly 53% of the world's supply of cobalt comes from nickel and copper mining in Africa, an area of rapidly decreasing appeal over stability concerns arising from conflict and child labour issues.

The cobalt market entered a period of oversupply in late 2009 which has continued to keep prices low; however, the cobalt supply/demand balance is expected to move into deficit territory in 2016. 49% of demand is driven by rechargeable batteries, used primarily in electric vehicles, portable tools, and portable electronic devices, and growing 11.7% y.o.y. Developments in Africa are likely leading to a decreased production from DRC as Amnesty International leads a global campaign for an ethical and regulated supply chain on cobalt. The exploration of Green Swan's flagship primary cobalt mining project shows astounding cobalt numbers with strong gold & nickel presence in politically stable northern Ontario. Green Swan is well-placed to take advantage of the growing demand for ethically-sourced North-American cobalt; The Tesla Model 3 is set to require roughly 7.5 million kilograms of cobalt alone for the Nevada gigafactory site.

Focusing in the south end around the area known as Ed's Watering Hole, Green Swan just completed a five-hole diamond drill project, assay results are expected mid-December, after which the company expects to receive a grant under the JEAP program, in an amount to be determined. Green Swan announced strong assay results on September 26, revealing new mineralised quartz veins, of which two had visible cobaltite and up to 0.183% cobalt along with up to 25.5 g/t gold. The November results published on the 7th, included a sample of over 44g/t gold. Green Swan expanded the known area of mineralisation, and undertook that summer work program to gather data and prepare for November's drilling project, which was completed on schedule and on budget.

Green Swan management theorises that mineralised quartz veins up to 1.2 metres in width occur over a ten to twenty-meter-wide pinch and swell zone extending discontinuously up to fifty metres from Ed's Watering Hole northward. The diamond drill program was designed to further test this theory and visible gold was reported from hole one at 48.2m within a 4cm quartz-carbonate vein on November 28th. Ed's Watering Hole features in the south zone of Green Swan's wider Copper Prince site, a block of sixteen contiguous mining claims over two hundred and sixty hectares and its primary asset and focus.



Map of Green Swan's claims  
contiguous to Glencore

According to Green Swan's CEO, Peter Clausi, *"The high consistent surface cobalt levels are one thing that make the property special. The other, is that the gold and cobalt are on patented lands, immediately next door to Glencore's Sudbury smelter operations. While the usual path is to complete a NI 43-101 report and then a Feasibility Study, Green Swan's results are strong enough it may go directly to a simple bulk*

*sample to be processed immediately next door Glencore. There is no need for a smelter, concentrator, tailing pond, or any of the other multimillion dollars capital projects. All Green Swan might need is an improved road, some dynamite, a backhoe and a dumptruck!"*

The United Nations projects that Earth will have over eight-billion human residents by 2030, about five-billion of which will live in urban areas. With the great consequences of petrol-based vehicles already visible in our most dense cities, it is imperative that we transition to a cleaner engine solution swiftly. Cobalt, and companies like Green Swan along with it, are essential to a seemingly inevitable future in which urbanisation and lithium-ion battery requirements continue to grow.

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## **North American cobalt race is on**

✘ eCobalt Solutions Inc. (TSX: ECS | OTCQB: ECSIF), based in Vancouver, boasts sole ownership of the only advanced stage, near term, environmentally permitted, primary cobalt deposit in the United States. As discussed in a previous post, on September 21, 2016, the company is dedicated to environmentally sound mining processes and their Idaho Cobalt Project (ICP) aims to offer consumers a transparent supply of ethically sourced and environmentally friendly battery grade cobalt chemicals, produced safely and responsibly in the United States.

Battery materials accounted for 49% of cobalt demand in 2015 and battery sector growth is expected to grow 11.7%,

and electric vehicles have the potential to more than double cobalt demand. Tesla, Ford, Mitsubishi, Porsche, Aston Martin, BMW, GM, Volvo, BYD, Renault Nissan, Mercedes Benz, and Volkswagen have all announced significant financial investments in producing Electric Vehicles (EV) and/or Energy Storage Systems (ESS) in the next several years.

On the 5th of October, the The U.S. Defense Logistics Agency (DLA) said it has a mandate to buy lithium cobalt oxide (LCO) and 2,160 kg of lithium nickel cobalt aluminium oxide (NCA) in the fiscal year starting 1 October 2016. The amounts were detailed by the DLA in its Annual Materials Plan for financial year 2016-2017, which runs from October to September. This is double the volume that the DLA was mandated to buy in the 2015-2016 fiscal year.

ICP is America's only near term, primary cobalt deposit with all necessary approvals required for construction and a fully approved Plan of Operations. eCobalt recently released feasibility level metallurgical work and has demonstrated it can successfully produce high purity, battery grade cobalt sulfate from ICP ore. The project is slated to produce the equivalent of 1,500 tons of high purity cobalt sulfate annually over a projected mine life of 12.5 years. Whilst at present, there is no offtake contract with the DLA, we believe it makes sense that should the US continue to stockpile the metal, then ICP's ore would more than likely be a strong candidate to receive that government supply contract.

After receiving positive results from the preliminary economic assessment and additional metallurgical test work conducted in 2015, On June 21, 2016, eCobalt announced the signing of an agreement with Micon International Limited (Micon) for technical services to conduct a Bankable Feasibility Study (BFS) on the ICP, which is expected to be completed before the end of 1Q-2017. In addition, positive results from additional metallurgical test work to produce cobalt sulfate heptahydrate were announced in March 2016. These results are expected to be

included in the BFS.

Staying true to their commitments, the ICP site incorporates several features that reduce its overall environmental footprint and waste production. In addition to a joint conservation program with the Idaho Conservation League, eCobalt claims that the modest 135-acre disturbance makes the site 100% reclaimable, and will minimise impact further by utilising an underground project design. The underground mine will have a target production rate of 800 tons per day with a weighted average annual production of 2,771,000lbs cobalt, 4,533,000lbs copper and 3,600oz gold over a 12.5-year life.

The total capital cost over the life of the mine is estimated at \$201.41 million, including \$146.76 million for initial capital, and \$54.65 million in sustaining capital and mine development capital during production. The overall cash production cost is estimated at \$468.73 million of processed cobalt contained in cobalt sulfate heptahydrate and \$175.58 million of processed cobalt sulfate heptahydrate net of by-product credits. The preliminary economic assessment has post-tax NPV at \$113 million (IRR 24.07%), with a life of mine gross revenue of just under a billion dollars.

As of August 2016, eCobalt reports working capital of CAD\$3.63 million, the Company has no long-term debt, and announced a 25-month shelf offering of \$100,000,000.