



## First Cobalt Begins Testing Material for Refinery Restart

TORONTO, ON — (November 8, 2018) – First Cobalt Corp. (TSX-V: FCC; ASX: FCC; OTCQX: FTSSF) (the "Company") is pleased to announce that it has commenced testing cobalt hydroxide material as feedstock for the First Cobalt Refinery.

### Highlights

- SGS Canada retained to test suitability of different cobalt feed material using the First Cobalt Refinery's current flowsheet
- Cobalt hydroxide material to be assessed as a source of feed for the refinery to produce cobalt sulphate or metallic cobalt products for sale into the North American market
- Discussions are underway with cobalt miners and commodity traders to explore options for ethically sourced cobalt hydroxide
- Cobalt Camp muckpile sampling and ore sorting programs indicate potential as incremental feed

Trent Mell, President & Chief Executive Officer, commented:

*"Our objective is to enter into a long-term agreement for a reliable source of ethically-mined cobalt. The cash flow potential from restarting the refinery in as little as 18 months could allow us to fund a significant amount of work to advance our flagship Iron Creek Cobalt Project in Idaho, USA while also providing a much-needed North American source of cobalt. In parallel with these tests, management has commenced discussions with third party sources of capital that would minimize or eliminate any equity dilution associated with a restart of the First Cobalt Refinery."*

The First Cobalt Refinery is a hydrometallurgical cobalt refinery in the Canadian Cobalt Camp, approximately 500 kilometres from the US border. On October 10, the Company released the results of three independent studies undertaken to estimate capital requirements, operating costs, permit renewal timelines, potential feedstock options and offtake opportunities. At a 24 tonne per day feed rate and using the current flowsheet, the capital cost of the restart is estimated at US\$25.7M (including a 30% contingency) and a permitting review concluded that a restart is possible within 18 months of selecting a feedstock.

The Company is exploring various sources of feed for the refinery, which could include cobalt concentrate from mining operations, cobalt hydroxide and recycled battery materials from North America. With some flowsheet modifications, the refinery could produce a cobalt sulphate for the lithium-ion battery market or cobalt metal for the North American aerospace industry or other industrial applications. Current market conditions indicate that pricing for cobalt sulphate is in line with cobalt metal.

The Company has engaged SGS Canada, a leading firm in mineral processing, metallurgy and process design, to test cobalt hydroxide and other material using the existing flowsheet of the First Cobalt Refinery and make recommendations on changes to the flowsheet to accommodate refining of cobalt hydroxide feed. Test work includes processing cobalt hydroxide using the First Cobalt Refinery flowsheet to a finished cobalt sulphate product. The

test work will also examine the steps necessary to produce cobalt metal that would be produced through electrowinning.

The Company is also engaging in discussions with companies specializing in the marketing and sourcing of concentrates to secure sources of ethically produced cobalt as feedstock for the First Cobalt Refinery.

The Refinery historically produced cobalt carbonate, nickel carbonate and silver precipitate which can be smelted to produce doré. In order to produce cobalt sulphate, the flowsheet would be modified to include a cobalt crystallization circuit.

A final decision on whether to put the Refinery back into production has not been made at this time and any decision is contingent on the outcome of the foregoing studies and discussions, as well as the sourcing of viable feedstock.

### **Muckpile Sampling and Ore Sorting Programs**

First Cobalt has sampled a number of historic muckpiles in the Cobalt Camp to determine whether this material could be concentrated and used as incremental feedstock for the First Cobalt Refinery, depending on the flowsheet.

In late 2017 and the first half of 2018, over 400 samples were collected from a number of muckpiles on First Cobalt's patented ground to study the potential for processing lower grade material from historic mining operations. Samples were collected using an excavator to create a cross section through each muckpile and taken at various depths from within. In tandem with the sampling program, three one-tonne samples were collected to test ore sorting technology with the intent of increasing the head grade of feed material.

Ore sorting techniques have been particularly effective in increasing head grade without a significant loss of payable minerals. Sampled muckpiles had an average grade ranging from 0.04% to 0.10% Co and from 10 grams per tonne (gpt) to 60 gpt Ag before ore sorting. After ore sorting, the average feed grade was increased from 0.081% Co and 46 gpt Ag to an **average of 0.575% Co and 190 gpt Ag**, representing a 7.1-times increase in cobalt grade and 4.1-times increase of silver grade. The ore sorting process provided an estimated 85% cobalt recovery and 58% silver recovery. Average results are based on five assayed ore sorting tests that were conducted in Austria during October 2018.

A total of 20 high priority muckpiles have been identified in Cobalt North, where total tonnage is estimated at 190,000 to 290,000 tonnes depending on thickness assumptions. These sampled muckpiles represent a portion of the muckpiles situated on First Cobalt's properties and across the entire Cobalt Camp. Muckpiles in Cobalt Central and Cobalt South have yet to be surveyed to the same degree of confidence, however the majority of muckpiles are found in Cobalt North, where most of the historic mining occurred. Preliminary ore sorting tests indicate average weight recovery of sorted material to be approximately 14%.

While testing of historic muckpiles in the Cobalt Camp remains ongoing, and this historic material may in the future provide an incremental source of feedstock to the Refinery, further work is required and at this time the Company anticipates sourcing all feedstock from third-party sources.

### **Quality Assurance and Quality Control**

First Cobalt has implemented a quality control program to comply with industry best practices for sampling, chain of custody and analyses. Muckpile samples were collected using an excavator to dig a cross section through each muckpile. Samples were collected in ten-litre pails and were taken at various depths from within the trench. Muckpiles for which safety

reasons precluded use of this procedure were similarly sampled with a number of test pits. Blanks, duplicates and standards are inserted at the processing sites as part of the QA/QC program.

Muckpile samples were prepared at PolyMet Labs in Cobalt, Ontario and analyzed by Bureau Veritas in Vancouver, British Columbia. At PolyMet, samples were dried, weighed crushed to 85% passing -6 mesh, roll crushed to 85% passing -10 mesh, split 250 gram pulps, then pulverized in a closed bowl ring pulverizer to 95% passing -150 mesh. Prepared samples were shipped to Bureau Veritas where they were analyzed by a 4-acid digestion for ICP analysis.

Run-of-muckpile samples for ore sorting tests were prepared and analyzed by SGS Canada in Lakefield, Ontario. The samples were crushed using a jaw crusher to minus 2" (50 mm). The crushed material was then screened at ½" (12.7 mm). Each fraction was separately blended and approximately 10 kg split out for assaying. Samples for assaying were crushed to nominal 10 mesh and a subsample riffled and pulverized for assaying.

Ore sorting tests were conducted by REDWAVE ROX Mineral Sorting in Brodningberg, Austria. Sorted streams were riffle split by REDWAVE and sent to ALS – OMAC Laboratories Limited in Ireland where the samples were pulverized for assaying.

### **Qualified and Competent Person Statement**

Peter Campbell, P.Eng., is the Qualified Person as defined by National Instrument 43-101 who has reviewed and approved the contents of this news release. Mr. Campbell is also a Competent Person (as defined in the JORC Code, 2012 edition) who is a practicing member of the Professional Engineers of Ontario (being a 'Recognised Professional Organisation' for the purposes of the ASX Listing Rules). Mr. Campbell is employed on a full-time basis as Vice President, Business Development for First Cobalt. He has sufficient experience that is relevant to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code. The term "Competent Person" is not recognised by Canadian securities regulatory authorities, and the term is used by the Company with reference to the JORC Code, and to ensure compliance with the ASX Listing Rules and applicable reporting requirements in Australia.

### **About First Cobalt**

First Cobalt a North American pure-play cobalt company whose flagship asset is the Iron Creek Cobalt Project in Idaho, USA, which has Inferred mineral resources of 26.9 million tonnes grading 0.11% cobalt equivalent<sup>1</sup>. The Company's other assets include 50 past-producing mines in the Canadian Cobalt Camp and the only permitted cobalt refinery in North America capable of producing battery materials.

On behalf of First Cobalt Corp.

Trent Mell  
President & Chief Executive Officer

**For more information visit [www.firstcobalt.com](http://www.firstcobalt.com) or contact:**

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### **Cautionary Note Regarding Estimates of Resources**

*Readers are cautioned that mineral resources are not economic mineral reserves and that the economic viability of resources that are not mineral reserves has not been demonstrated. The estimate of mineral resources may be materially affected by geology, environmental, permitting, legal, title, socio-political, marketing or other relevant issues. The mineral resource estimate is classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's "2014 CIM Definition Standards on Mineral Resources and Mineral Reserves" incorporated by reference into NI 43-101. Under Canadian rules, estimates of inferred mineral resources may not form the basis of feasibility or pre-feasibility studies or economic studies except for Preliminary Economic Assessment as defined under NI 43-101. Readers are cautioned not to assume that further work on the stated resources will lead to mineral reserves that can be mined economically. An Inferred Mineral Resource as defined by the CIM Standing Committee is "that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration."*

### **Cautionary Note Regarding Forward-Looking Statements**

*This news release may contain forward-looking statements and forward-looking information (together, "forward-looking statements") within the meaning of applicable securities laws and the United States Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, are forward-looking statements. Generally, forward-looking statements can be identified by the use of terminology such as "plans", "expects", "estimates", "intends", "anticipates", "believes" or variations of such words, or statements that certain actions, events or results "may", "could", "would", "might", "occur" or "be achieved". Forward-looking statements involve risks, uncertainties and other factors that could cause actual results, performance and opportunities to differ materially from those implied by such forward-looking statements. Factors that could cause actual results to differ materially from these forward-looking statements are set forth in the management discussion and analysis and other disclosures of risk factors for First Cobalt, filed on SEDAR at [www.sedar.com](http://www.sedar.com). Although First Cobalt believes that the information and assumptions used in preparing the forward-looking statements are reasonable, undue reliance should not be placed on these statements, which only apply as of the date of this news release, and no assurance can be given that such events will occur in the disclosed times frames or at all. Except where required by applicable law, First Cobalt disclaims any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.*

1. *All material assumptions and technical parameters underpinning the Mineral Resource estimate in the ASX announcement dated 27 September 2018 continue to apply and have not materially changed since last reported.*

## JORC Code, 2012 Edition - Table 1

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
<i>Sampling techniques</i>	Muckpile samples were collected with an excavator which was used to dig a cross section through each muckpile. Samples were collected in 10 litre pails and were collected at various depths from within the cross section. Muckpiles for which this procedure was impractical for safety reasons were similarly sampled with a number of test pits. Approximately 10 to 15% of the total muckpile volume was excavated. During the excavation, samples were collected at an approximate rate of one sample for every 25 to 50 tonnes excavated.
<i>Drilling techniques</i>	<ul style="list-style-type: none"><li>• No drilling was conducted for the assays in this report.</li></ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"><li>• No drilling was conducted for the assays in this report.</li></ul>
<i>Logging</i>	<ul style="list-style-type: none"><li>• No drilling was conducted for the assays in this report. A complete sampling report has been prepared.</li></ul>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"><li>• Duplicate samples were prepared in the prep lab from the muckpile material that was collected and submitted as a separate sample.</li><li>• Muckpile samples were prepared at PolyMet Labs in Cobalt, Ontario. Samples were dried, weighed, crushed to 85 % passing -6 mesh, roll crushed to 85% passing -10 mesh, split 250 gram pulps, then pulverized in a closed bowl ring pulverizer to 95 % passing -150 mesh.</li></ul>
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"><li>• QAQC for results were evaluated using standards, repeat analyses and blanks. No issues have been noted.</li></ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"><li>• A sampling report has been created for each muckpile that was sampled. The sampling report contains georeferenced aerial drone imagery, measurement of the area of the muckpile, UTM coordinates and depth for each sample taken.</li></ul>

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<i>Location of data points</i>	<ul style="list-style-type: none"><li>The following is a list of UTM coordinates of the muckpiles that were sampled. Eastings and Northings are UTM NAD83 Zone 17N.</li></ul> <table><tr><th>#</th><th>Property</th><th>Pile ID</th><th>Easting</th><th>Northing</th></tr><tr><td>1</td><td>Forneri</td><td>WR1HS42</td><td>613100</td><td>5229084</td></tr><tr><td>2</td><td>Frontier</td><td>WR5HR16</td><td>613055</td><td>5228434</td></tr><tr><td>3</td><td>Frontier</td><td>WR1HR16</td><td>613125</td><td>5228469</td></tr><tr><td>4</td><td>Frontier</td><td>WR2HR16</td><td>613194</td><td>5228494</td></tr><tr><td>5</td><td>Frontier</td><td>WR3HR16</td><td>613238</td><td>5228519</td></tr><tr><td>6</td><td>Frontier</td><td>WR6HR16</td><td>613249</td><td>5228463</td></tr><tr><td>7</td><td>Keeley</td><td>WR1HR2119</td><td>613192</td><td>5227903</td></tr><tr><td>8</td><td>Keeley</td><td>WR1HR19</td><td>613374</td><td>5228020</td></tr><tr><td>9</td><td>Keeley</td><td>WR2HR19</td><td>613075</td><td>5228014</td></tr><tr><td>10</td><td>Keeley</td><td>WR3HR19</td><td>613286</td><td>5228133</td></tr><tr><td>11</td><td>Kerr Lake</td><td>WRKR</td><td>601363</td><td>5247739</td></tr><tr><td>12</td><td>Kerr Lake</td><td>WRKRA</td><td>601372</td><td>5247693</td></tr><tr><td>13</td><td>Drummond</td><td>WRDR</td><td>601703</td><td>5247837</td></tr><tr><td>14</td><td>Drummond</td><td>WRDRA</td><td>601733</td><td>5247940</td></tr></table> <ul style="list-style-type: none"><li></li></ul>	#	Property	Pile ID	Easting	Northing	1	Forneri	WR1HS42	613100	5229084	2	Frontier	WR5HR16	613055	5228434	3	Frontier	WR1HR16	613125	5228469	4	Frontier	WR2HR16	613194	5228494	5	Frontier	WR3HR16	613238	5228519	6	Frontier	WR6HR16	613249	5228463	7	Keeley	WR1HR2119	613192	5227903	8	Keeley	WR1HR19	613374	5228020	9	Keeley	WR2HR19	613075	5228014	10	Keeley	WR3HR19	613286	5228133	11	Kerr Lake	WRKR	601363	5247739	12	Kerr Lake	WRKRA	601372	5247693	13	Drummond	WRDR	601703	5247837	14	Drummond	WRDRA	601733	5247940
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<i>Data spacing and distribution</i>	<ul style="list-style-type: none"><li>Samples were taken at various depths from within each muckpile that was excavated down to grade.</li><li>Approximately 10 to 15% of the total muckpile volume was excavated. During the excavation, samples were collected at an approximate rate of one sample for every 25 to 50 tonnes excavated.</li></ul>																																																																											
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"><li>The orientation of the excavator transect was determined by the size and shape of the muckpile as geological structure is not maintained within the pile.</li></ul>																																																																											
<i>Sample security</i>	<ul style="list-style-type: none"><li>Samples were collected in plastic 10 litre pails. Sample tags were applied directly to the pail upon sampling. Samples were delivered daily to the prep lab.</li></ul>																																																																											

Criteria	Commentary
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>Field sample numbers were used through to the sample prep stage at which time a lab sample number was applied. A complete audit of field samples collected, samples prepped and samples assayed has been completed.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>The Greater Cobalt Project consists of several mining patents, mining leases and unpatented exploration claims. In total, the Greater Cobalt Project consists of 10,000 hectares of prospective land and 50 historic mines.</li> <li>The Project is sub-divided into three areas: Cobalt North, Cobalt Central and Cobalt South.</li> </ul>
<b><i>Exploration done by other parties</i></b>	<ul style="list-style-type: none"> <li>Historic mining occurs on most properties dating back to 1906. The most recent mining activity on the combined property occurred in 1983. Diamond drilling has been conducted in places, largely from underground.</li> <li>Minor (&lt;25 holes) exploration drilling has been conducted since mine closures</li> <li>Previous property owners in the Cobalt Camp have taken some grab samples from muckpiles to assess their mineral endowment in a cursory way. However, detailed muckpile sampling on this scale has not previously been done.</li> </ul>
<i>Geology</i>	<p>Archean Keewatin rocks are the oldest rocks in the Cobalt Camp and form the southernmost portion of the Western Abitibi subprovince of the Superior Province. These rocks include predominantly intermediate to mafic metavolcanic flows with intercalated metasedimentary rocks. The Archean rocks were folded and intruded by mafic to ultramafic dikes and granite stocks and batholiths. The eroded Archean surface is unconformably overlain by relatively flat lying Paleoproterozoic sedimentary rocks of the Huronian Supergroup which forms the mildly deformed Cobalt Embayment of the Southern Province. At the northeast edge of the Cobalt Embayment in the Cobalt area, the Huronian Supergroup rocks comprise only the Cobalt Group (Gowganda and Lorrain formations) and</p>

Criteria	Commentary
	<p>are commonly found filling interpreted paleo-valleys or troughs in the Archean basement. Early Proterozoic-age Nipissing Diabase intrudes both the Archean basement and the Huronian sediments. The Nipissing Diabase are the most abundant and widespread igneous rocks intruding the Huronian Supergroup sediments and occur as dykes, and sills up to several hundred metres thick. In the Cobalt area, the Nipissing diabase is interpreted as a thick undulating sheet intruding the Cobalt Group sediments at or immediately above the Archean unconformity.</p> <p>The Cobalt Camp is the type locality of arsenide silver-cobalt vein deposits which are the exploration target at the Cobalt Project. Arsenide silver-cobalt vein deposits are localized in areas affected by basinal subsidence and rifting and are spatially related to regional fault systems and closely associated with intrusions of mafic rocks. The arsenide silver-cobalt vein deposits in the Cobalt Camp are associated with Aphebian conglomerate, quartzite, and greywacke rocks of the Cobalt Group (Coleman Member of the Gowganda Formation), as well as with major sill-like bodies of Nipissing diabase and with Archean mafic and intermediate lavas and intercalated pyroclastic and sedimentary rocks. Distribution of the silver-cobalt veins in the Cobalt Camp is controlled by the contact between the Nipissing diabase sheets and the rocks of the Cobalt Group (Gowganda Formation) and to a lesser extent the Archean metavolcanic and metasedimentary rocks. The veins occur in the diabase and in the Aphebian and Archean rocks within about 200 m of their contact with the diabase.</p>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>Results in this report were not obtained by drilling.</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>Standard statistical functions were used to examine the dispersion of the raw assay data. Muckpile assays were aggregated using both a normal and log-normal distribution.</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>There is no relationship between mineralisation widths and intercept length. Mineralisation is essentially heterogeneously distributed throughout the muckpiles that were sampled.</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>UTM coordinates of the muckpiles that were sampled have been provided in this table but a map has not been provided.</li> </ul>



Criteria	Commentary
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>For the purpose of the press release, economic implications of the results have not been described.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>The muckpile sampling program is being conducted independently from the exploration program in the Cobalt Camp. Other exploration programs and results do not have a direct bearing on this program.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>Further sampling of additional muckpiles is planned. First Cobalt has identified 20 “high priority” muckpiles that will be sampled in much the same manner as has been described herein.</li> </ul>