Positive PEA Results Demonstrates Path to Copper Production After Tax NPV8 of $71M and IRR of 30%

11.12.2020 | Newsfile

Sudbury, December 11, 2020 - Rockcliff Metals Corp. (CSE: RCLF) (FSE: RO0) (WKN: A2H60G) ("Rockcliff" or the "Company") is pleased to announce the results of a Preliminary Economic Assessment ("PEA") for the Company's 100% owned Tower and Rail Project ("the Project"), located in the Flin Flon-Snow Lake Greenstone Belt in the Snow Lake area of central Manitoba. The PEA indicates the Project has the potential to generate positive economic returns through its extremely low capital intensity and low operating costs, validating the development strategy pursued by the Company. All references to currency herein are in Canadian dollars unless otherwise specified.

Highlights:

- $115 million pre-tax NPV_8, IRR 41% at Base Case[1]
- $71 million post-tax NPV_8, IRR 30%[1]
- $131 million post-tax NPV_8, IRR 49% at spot prices[2]
- Payback of 2.1 years
- Average steady state copper equivalent CuEq production[3] of 18.6 thousand tonnes per annum
- Average steady state EBITDA of $89 million per annum
- C1 cash costs of US$1.34/CuEq lb sold
- All-in sustaining costs of US$1.91/CuEq lb sold
- Pre-production capital cost of $95 million
- Industry leading capital intensity of US$4,996/tonne CuEq production
- Copper recovery to Cu concentrate 97%
- Sorting decreases life of mine costs by over $125 million, and nearly doubles mill annual CuEq output

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[1] Base case economics use the following assumptions: Copper price US$3.15/lb, zinc price US$1.10/lb, gold price US$1,500/oz, silver price US$17.50/oz and Canadian dollar to United States dollar exchange rate of 1.30.

[2] Spot price case economics use prevailing metal prices as of December 09, 2020: Copper price US$3.48/lb, zinc price US$1.27/lb, gold price US$1,854 oz, silver price US$24.22/oz and Canadian dollar to United States dollar exchange rate of 1.30.

The PEA envisions developing the Tower Deposit in parallel with the refurbishment of the leased Bucko Mill facility, followed by the development of the Rail Deposit, resulting in a combined Life of Mine ("LOM") of seven years, with exploration upside at both properties. The mine design principles focus on responsible re-use of capital at Rail to enhance economics of successive mine development projects. Stopes are mined as large, mechanized shrinkage stopes with maximum use of automation and an effective bulk material handling system. The target of low mine operating costs for these Deposits to manage low metal price cycle

risk is also achieved, with projected mining costs of $48.06/tonne mined delivered through the crushing and sorting circuits at the mine site.

Based on test work completed to date, the use of a sorter effectively removes approximately 47% of the mass from the mined material with minimal metal losses. The waste from the sorter is placed underground as backfill. This key enabler allows for maintaining low operating costs down stream, effectively eliminating haulage cost to the mill, milling costs and tailings requirements for this waste material.

Alistair Ross, President and CEO of Rockcliff, commented, "The results of the PEA demonstrate that good economics are possible from a responsible ESG approach to new mine design. The integration of modern mine technologies that dramatically improve the safety and health of workers underground and reduce the environmental footprint of our operations are immediately evident. The estimated low mine operating costs and low capital intensity will strengthen Rockcliff's ability to manage through low metal price environments as indicated by the estimated C1 costs. The key opportunity that has surfaced from these results is the impact on financing, of adding potential mine life, and Rockcliff is fortunate in that it has a number of potential targets to follow up on. These include the possibility of adding Mineral Resources at Tower and Rail, and advancing the highly prospective Bur, Copperman and Freebeth properties further along in their development cycles. We look forward to continuing the work with local First Nations and communities as the next steps of the Project are planned and then executed. The overall results provide Rockcliff with exciting opportunities to further assess its extensive property portfolio, including five other named deposits and help prioritize a large number of exploration targets yet to be tested."

Visit Rockcliff's YouTube channel for a message from President and CEO, Alistair Ross. To access the video, please visit: https://youtu.be/rpEv17w1bSM

Cannot view this video? Visit:
https://www.youtube.com/watch?v=rpEv17w1bSM

Chief Anderson of Norway House First Nation, said, "As a business partnership with Rockcliff Metals, our experience has worked well with Norway House Cree Nation ("NHCN") providing the camp, camp support and multiple services over the past year. The continued creation of economic opportunities increases the support that NHCN has for mining projects. We look forward to reviewing the PEA and discussing next steps."

PEA Summary

Table 1: Select PEA Assumptions and Highlights

	Base Case	Spot Price Environment	Low Metal Price Environment
Metal Price Assumptions (US$)	3.15/lb Cu 1.10/lb Zn 1500/oz Au 17.50/oz Ag	3.48/lb Cu 1.27/lb Zn 1,854/oz Au 24.22/oz Ag	2.75/lb Cu 1.00/lb Zn 1,350/oz Au 16.50/oz Ag
FX Rate (CAD: USD)	1.30	1.30	1.30
Steady State EBITDA	$89 million	$110 million	$68 million
Pre-Tax NPV_8 & IRR	$115 million / 41%	$207 million / 66%	$24 million / 15%
Post-Tax NPV_8 & IRR	$71 million / 30%	$131 million / 49%	$6 million / 10%
Payback Period from Commencement of Operations	2.1 years	1.4 years	4.9 years
Pre-Production Costs, net of pre-operating revenues	$95 million	$90 million	$103 million

Health, Safety, Environment and Community Commitment

Rockcliff is contributing to our planet's most pressing environmental challenges by planning to responsibly develop copper rich Mineral Resources for the new economy.

The Project's required plans and permits for possible mining and milling in the province of Manitoba assumes

use of the Government's new single point of contact model in a process that guarantees First Nation's involvement in the entire decision-making process.

The mine design limits the energy consumption per unit of work as follows:

- Use of energy efficient battery/electric mobile equipment underground;
- With no diesel emissions requiring ventilation, electrical consumption on the vent fans has been reduced by 50% compared to the use of a diesel-powered fleet;
- With the reduction in ventilation requirements, heating of ventilation air has been reduced by 50% over traditional designs.

Further energy advantages implicit with the Project are the use of Manitoba Hydro whose grid is 99% supplied by renewable energy sources. The near surface nature of Tower and Rail Deposits requires less energy for access versus a deep deposit scenario whereby the development access uses small cross-section openings equipped with a Rail-Veyor® Technologies Global Inc. electric train to replace diesel trucking. A sorter is used to increase head grades to the mill while the rejected waste is delivered back underground on return trips for backfilling. The use of a sorter at the mine site eliminates added trucking and fuel to deliver the mineralized material to the mill. The milling energy is reduced as there is less crushing and grinding of the higher-grade mineralized material for liberating the minerals and rejecting tailings waste. The energy required in the mill prior to placement in the Tailings Management Facility ("TMF") is greatly reduced with this approach. The size of the required TMF is also anticipated to be reduced by nearly 50% as a result.

The mine design involves proven technologies combined to reduce fatal hazard exposure, such as open holes, working at exposed faces, and risk of people/mobile machinery interaction. Workforce exposure to diesel exhaust emissions is also eliminated, and steps to improve mental health of workers are included in the Project regarding camp design, shift rotations, and employee selection. The remote operating center reduces camp size and allows for improved efficiency, productivity, and reduced travel, further reducing hazards and environmental impacts. The selection of key contractors early in the development process ensures their input is part of the design and training programs. This inclusive approach further manages risk, reduces exposures, and aligns the execution plan around responsible production goals.

Financial Assessment

The Project is estimated to produce 239 million pounds of payable CuEq metal over the 7-year LOM, with an estimated all in C1 + sustaining cost of $2.49/CuEq lb.

The mine design is based on a combination of bulk and selective underground mining methods utilising a leasing option to minimise upfront capital costs on the mobile fleet. The near-surface geometry of the Tower and Rail Deposits are favourable for rapid access and early production start-up, 16 months after project construction commences. This shortens the capital payback period and improves overall economics for the Project.

Mining costs are estimated to be $48.06/tonne mined, which includes crushing and sorting at the mine site. Operating costs have been estimated based on engineered mine plans incorporating geotechnical work done to date, industry standard labour rates, and quoted rates for power, crushing, sorting and camp services. Capital costs have been estimated based on the engineered mine plan and supplier quotes for a majority of mine infrastructure and mobile equipment.

Costs for haulage of sorted mineralized material from the mine site is based on quoted rates from vendors, averaging $17.99 per mineralized material tonne delivered to the mill over the LOM.

The Company has a lease option for the existing Bucko Mill and TMF, which reduces the upfront capital and reduces project construction risk. The economic model includes 2.9 million tonnes of sorted mineralized material processed over the LOM, averaging 1,400 tpd delivered to the mill. Capital costs have been estimated based on assessment of existing facilities, and quotes on equipment identified as being required to recommission and upgrade the circuits to support the throughput rates required.

Bucko Mill operating costs have been estimated based on the reagent mix outputs from metallurgical testing

done to date and typical wear rates for major consumables. Reagents and major consumables have been quoted from suppliers. Average processing costs have been estimated to be $32.73/tonne processed over the LOM.

Copper and zinc concentrates produced at the Bucko Mill are envisioned to be loaded onto rail cars directly at the Bucko Property and shipped by rail to Glencore's processing facilities. Treatment and refining charges are based on indicative terms provided by Glencore based on the concentrate values from the metallurgical test work done to date. Copper concentrate treatment and refining charges are modelled at US$62/tonne and US$0.062/lb, respectively. Zinc concentrate treatment charges are modelled at US$299.75/tonne. Glencore has provided indicative early payment terms, which provide for 95% of sale to be settled 5 days after loading concentrates on rail cars. The following chart illustrates the breakdown of gross revenue by metal type over the LOM:

Figure 1: Revenue breakdown by metal type.

To view an enhanced version of Figure 1, please visit:
https://orders.newsfilecorp.com/files/3071/70051_Capture.jpg

The following table presents sensitivities to the NPV and IRR for changes in copper prices. All other metal prices are held constant per the Base Case.

Table 2: Pre-tax and after-tax NPV_8 and IRR Sensitivity Analysis to Changes in Copper Prices

Copper price	US$2.75/lb	US$3.00/lb	US$3.15/lb (Base Case)	US$3.30/lb	US$3.55/lb
Pre-tax IRR %	18	32	41	49	63
Pre-tax NPV_8 $M	34	85	115	145	196
After-tax IRR %	12	24	30	36	47
After-tax NPV_8 $M	14	51	71	90	124

The following table presents the NPV_8 sensitivity to changes in the operating and capital cost assumptions.

Table 3: After Tax NPV_8 Sensitivity Analysis to Changes in Capital and Operating Costs ($millions)

	-20%	-10%	Base Case	+10%	+20%
Processing costs $M	103	87	71	52	28
Mining costs $M	122	98	71	39	2
Sustaining capital $M	96	84	71	56	38
Initial Project capital $M	94	82	71	59	46

The following table summarizes the LOM capital for the Project, with the pre-production costs net of pre-operating revuenues and the LOM sustainting capital costs. These costs are categorized for the main infrastructure items as well as the mining and milling processes, with 20% contingency applied.

Table 4: LOM Capital Summary

	Pre-production Costs, Net of Pre-operating Revenues ($ millions)	Sustaining Capital ($ millions)
Mine Surface Infrastructure	25.7	
Mine UG Infrastructure	10.7	
UG Development	14.9	
Mobile Equipment	9.3	
Tailings Expansion	1.7	
Mill Refurbishment and Upgrades	12.3	
Indirect	8.6	
Contingency	16.40	
Ramp-up Operating Costs	21.3	
Ramp-up Revenues	(25.4)	
Total	95.4	

The following table summarizes the LOM operating costs and margin for the Project in terms of the cost per CuEq sold and in unit cost of material processed, with the majority of the value attained through the novel mining process.

Table 5: LOM Operating Cost Breakdown and Margin

	$/CuEq lb sold	$/t processed
Mining Costs	0.94	76.80
Crushing at Mine	0.10	8.22
Sorting at Mine	0.07	5.66
Haulage to Mill	0.22	17.99
Milling	0.40	32.73
Total C1 Cost	1.74	141.40
Total C1 Cost (US$)	1.34	108.77
Sustaining Capital	0.75	60.87
C1 + Sutaining Costs	2.49	202.27
C1 + Sutaining Costs (US$)	1.91	155.59
Revenue, Net of Smelter, Freight, and Royalty[4]	3.68	298.76
Margin before Taxes	1.19	96.49

[3]Royalties of 1% on Tower production and 2% on Rail production

Geology and Mineral Resource Estimate - Tower Deposit

The Tower Deposit is defined as a remobilized, single, steeply dipping, high-grade, Volcanogenic Massive Sulphide ("VMS") lens that is located immediately below an approximate 100 metres ("m") thick layer of Paleozoic limestone cover. The Tower Deposit consists of stringers and massive sulphide lenses of chalcopyrite, pyrite, pyrrhotite and sphalerite. Drilling has intersected the Tower Deposit and the extension mineralization over a strike length of 1,000m and to a vertical depth from surface to approximately 750m. The Tower Deposit remains open at depth and partially to the north. A longitudinal projection of the indicated and Inferred Mineral Resource for the Tower Deposit is shown (Figure 2). Within the property limits, the Tower Deposit geology is associated within a 12-kilometre-long arcuate trending magnetic horizon hosting several additional untested conductive geophysical targets considered by the Company to be worthy of follow-up exploration. The depositional environment of the Tower Deposit is like that of present and past producing VMS deposits and mines associated with bi-model volcanism (felsic to mafic volcanic and volcaniclastic rocks) in the Flin Flon-Snow Lake Greenstone Belt.

Figure 2: Tower Deposit - Indicated and Inferred Mineral Resource, looking west.

To view an enhanced version of Figure 2, please visit:
https://orders.newsfilecorp.com/files/3071/70051_88143f06e4f88aae_002full.jpg

No Mineral Reserves have been estimated for the Project. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. The PEA is based on the Mineral Resource Estimate (MRE) for the Tower Deposit reported herein (Table 6) considering drilling information available up to October 4, 2020. This was evaluated using a geostatistical block modeling approach constrained by polymetallic mineralization wireframes utilizing Geovia GEMS™ modeling software. The evaluation of the MRE involved CuEq cut-off value determination, cross-sectional polyline interpretation, constraining wireframe creation, compositing, grade capping, variography, grade interpolation and MRE quantification.

Table 6: Tower Deposit Updated Mineral Resource Estimate at 1.5% CuEq cut-off October 4, 2020(1-10)

Classification	Tonnes (k)	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)	CuEq (%)	Cu (Mlbs)	Zn (Mlbs)	Au (koz)	Ag (koz)	CuEq (Mlbs)
Indicated	1,452	4.28	1.21	0.76	21.6	5.24	137.1	38.8	35.5	1,007	167.6
Inferred	160	2.65	1.84	0.30	11.6	3.35	9.4	6.5	1.5	60	11.8

1) Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The

estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues.
2) Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
(3) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
(4) Approximate Jan 31/20 two year trailing average US$ metal prices used were $3/lb Cu, $1.10/lb Zn, $1,350/oz Au, and $16.50/oz Ag. The US$: CDN$ exchange rate used was 0.77.
(5) Respective process recoveries for Cu, Zn, Au, Ag were 95%, 80%, 80%, 80%.
(6) Respective smelter payables for Cu, Zn, Au, Ag were 96.5%, 85%, 90%, 90%.
(7) Respective USD Cu and Zn smelter treatment charges used were $80 and $250/tonne with concentrate freight of CDN$65/tonne.
(8) CuEq% was calculated as follows: Cu% + (Zn % x 0.220) + (Au g/t x 0.673) + (Ag g/t x 0.008).
(9) The 1.5% CuEq cut-off is approximately equivalent to a C$100/tonne project operating cost.
(10) Contained metal totals may differ due to rounding.

Geology and Mineral Resource Estimate - Rail Deposit

The Rail Deposit is a single, steeply dipping, high-grade, copper-rich VMS lens that subcrops at surface and ranges in width from 0.25m to 5.0m. The Rail Deposit consists of stringers and massive sulphide lenses of chalcopyrite, pyrrhotite, pyrite and sphalerite. Drilling has intersected the Rail Deposit over a strike length of 960m and to a vertical depth of 680m. The mineralization remains open to the south and at depth where additional conductive areas have been identified by borehole and surface Time Domain Electromagnetic geophysical surveys. A longitudinal projection of the indicated and Inferred Mineral Resource for the Rail Deposit is shown (Figure 3). The Rail Deposit is associated within a 5km long conductive horizon of similar juvenile arc rocks that host all of the VMS mines in the Flin Flon-Snow Lake Greenstone Belt.

Figure 3: Rail Deposit - Indicated and Inferred Mineral Resource, looking west.

To view an enhanced version of Figure 3, please visit:
https://orders.newsfilecorp.com/files/3071/70051_88143f06e4f88aae_003full.jpg

No Mineral Reserves have been estimated for the Project. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. The PEA is based on the MRE for the Rail Deposit, as released to the market in on March 31, 2020 and reported herein (Table 7) considering drilling information available up to October 4, 2020. This was evaluated using a geostatistical block modeling approach constrained by polymetallic mineralization wireframes utilizing Geovia GEMS^{TM} modeling software. The evaluation of the MRE involved CuEq cut-off value determination, cross-sectional polyline interpretation, constraining wireframe creation, compositing, grade capping, variography, grade interpolation and MRE quantification.

Table 7: Rail Deposit Updated Mineral Resource Estimate at 1.5% CuEq cut-off October 4, 2020(1-10)

Classification	Tonnes (k)	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)	CuEq (%)	Cu (Mlbs)	Zn (Mlbs)	Au (koz)	Ag (koz)	CuEq (Mlbs)
Indicated	1,168	2.73	0.86	0.80	8.9	3.52	70.2	22.0	30.0	334	90.7
Inferred	728	3.11	0.72	1.11	8.5	4.09	50.0	11.6	25.9	200	65.6

1) Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues.
2) Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
(3) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
(4) Approximate Jan 31/20 two year trailing average US$ metal prices used were $3/lb Cu, $1.10/lb Zn,

$1,350/oz Au, and $16.50/oz Ag. The US$: CDN$ exchange rate used was 0.77.
(5) Respective process recoveries for Cu, Zn, Au, Ag were 95%, 80%, 80%, 80%.
(6) Respective smelter payables for Cu, Zn, Au, Ag were 96.5%, 85%, 90%, 90%.
(7) Respective USD Cu and Zn smelter treatment charges used were $80/tonne and $250/tonne with concentrate freight of CDN$65/tonne.
(8) CuEq% was calculated as follows: Cu% + (Zn % x 0.220) + (Au g/t x 0.673) + (Ag g/t x 0.008).
(9) The 1.5% CuEq cut-off is approximately equivalent to a CDN$100/tonne project operating cost.
(10) Contained metal totals may differ due to rounding.

Mine Design - Tower and Rail Deposits

The mine design for the Tower and Rail Deposits combines elements of traditional mine development and mining methods with proven advancements in technology, automation, and communications. Since the Tower and Rail Mineral Resources are near surface and have similar geometry (steeply dipping, narrow, and relatively long strike length), the same extraction approach and design principles are applied to both deposits.

The mine design is centred around using a twin ramp access system and a Rail-Veyor® to facilitate high-speed development and to streamline the material handling process by bringing the bulk material handling system to the drawpoints to load the rail cars using a continuous loader. The successes, learnings, and results from Rail-Veyor® experience at the test mine at Vale's 114 Orebody along with further advancements in the technology have been used in the mine design.

The twin ramps are small profile and extend from surface to the bottom of the Mineral Resource at each deposit. The Service Ramp is for the movement of personnel and material while the Rail-Veyor® Ramp is for transferring waste rock and mined Mineral Resource to surface and to return waste rejects from the sorter to the backfilling dump loop located just below the crown pillar, for dumping into raises that feed the top stopes across the entire strike length. The ramps serve as the main ventilation circuit, with fresh air sent down the service ramp and return air directed up the Rail-Veyor ramp. These ramps also provide two egresses.

The primary mining method selected is a variation of a mechanized shrinkage mining method with narrow-vein sublevel longitudinal longhole stoping. Transverse drawpoints are used to draw down the Mineral Resource along the strike of the stopes in a controlled shrinkage type manner, while backfill is placed on top of the shrinking muck pile to minimize the exposure of the hanging wall and footwall. The mining method is referred to as Mechanized Shrinkage ("MS"). An Avoca mining method is used at the top mining horizon to establish a permanent backfill horizon below the crown pillar and to provide valuable early production while infrastructure development is established to start the MS with high tonnages. The Avoca method uses access on a bottom sill for uphole drilling, loading and blasting followed by mucking and tramming direct to the material handling system. The backfilling is achieved from a top sill, from a central access point, using an LHD for waste placement. The filling follows closely behind the advancing mining front to limit hangingwall exposure.

For MS, sublevels are established to access the resource and develop longitudinally along strike to position for longhole drilling and blasting. Extraction horizons will be established at approximately 100m vertical intervals and a Rail-Veyor® drift is developed parallel to the Mineral Resource and connected to the stopes through a series of transverse drawpoints to allow continuous loaders to pull broken mineralized material from the stopes and load directly into Rail-Veyor® cars.

Geotechnical engineering designs indicate large stopes can be mined in this manner, without the need for substantial rib and sill pillars, given the controlled shrinkage and sloughing of host rocks on top of the blasted mineralized material and with the added placement of backfill to top up the voids for overall stope and regional stability. Particle flow modelling simulations are used to determine optimal spacings of drawpoints for proper drawdown and backfill interaction, with further pulling ellipse assessments to estimate recovery and dilution.

Once established, production from MS stopes averages 2,800 tpd of production. The additional material from stope development headings can be transported with the system and averages approximately 3,000 tpd of total material movement from the underground workings to surface.

Additional key features of the mine designs for Tower and Rail include:

- Mobile equipment is primarily battery/electric powered.
- Equipment and processes are autonomous and tele-remote capable to allow maximum productive time in the workplace when workers cannot be present underground.
- Jumbo and longhole drilling processes are automated (even if an operator is in the workplace with a drill). Drills supplemented with technology for controlling longhole and horizontal drill accuracy to minimize overbreak and dilution from drill/blast processes.
- Mass blasting is done with precision timing control to generate large volumes of broken mineralized material per stope.
- Off-site control centre monitors the status and performance and location of equipment, activities, personnel and facilitates in-shift intervention and control of the mining processes, when needed.
- Development headings are driven as small as possible to accommodate the equipment and processes and to provide sufficient ventilation volumes and velocities.
- No full mine compressed air reticulation system. Onboard or portable compressors will be used.
- No vertical passes except short raises for the backfilling system.
- No ventilation raises except for a short intake raise to surface located near the portal of the Service Ramp, to meet second egress requirements.

An isometric view of each mine design is shown in Figure 4 (Tower Deposit) and Figure 5 (Rail Deposit).

Figure 4: Tower Deposit, Mine Design, Isometric View Looking East.

To view an enhanced version of Figure 4, please visit:
https://orders.newsfilecorp.com/files/3071/70051_88143f06e4f88aae_004full.jpg

Figure 5: Rail Deposit, Mine Design, Isometric View Looking West.

To view an enhanced version of Figure 5, please visit:
https://orders.newsfilecorp.com/files/3071/70051_88143f06e4f88aae_005full.jpg

The Tower Deposit will be developed and mined first, followed by the Rail Deposit. The start of construction of the Rail Deposit will be timed to ramp-up production when Tower production ramps down. Sorting on surface is considered in the estimated stope cut-off grade of 1.1% CuEq used for generating stope shapes for the Tower Deposit and 1.2% CuEq used for the Rail Deposit. For both deposits, a marginal cut-off grade of 0.8% CuEq was used to include material along strike where development is in place. The mine and mill production profile for the Project is shown in Figure 6.

Figure 6: Mine and Mill Production Summary.

To view an enhanced version of Figure 6, please visit:
https://orders.newsfilecorp.com/files/3071/70051_88143f06e4f88aae_006full.jpg

Metallurgical Test Work

Rockcliff contracted Base Metallurgical Laboratories ("BML") in Kamloops, British Columbia to characterize the mineralized material mineralogy and determine initial metallurgical response for diamond drill core samples from the Project. The BML test work was conducted in January and February 2020 using core drilled late in 2019 for the express purpose of conducting metallurgical testing.

Sub-samples comprised of -40 +10 mm sized core fragments from the mineralized envelope and surrounding host rock for the Project were sent to the Steinert test facility in Walton Kentucky, USA. State-of-the-art X-ray technology was employed to evaluate the potential to identify and separate the rejected waste rock fragments from Cu, Zn and Au bearing material. While this PEA is based on the results obtained in the initial test programs, additional work is required to confirm and enhance the results that have been achieved thus far.

Processing and Recovery Methods

The PEA is based on metal concentration at the Bucko Mill. The design is a balanced approach based on

utilizing as much of the existing Bucko Mill equipment and infrastructure as possible while adapting the mill from a nickel concentrator to a conventional Cu/Zn separation flowsheet. The recovery process is identical for both Tower and Rail materials although the Tower Deposit mineralized material will be processed through the concentrator first, followed by the feed from the Rail Deposit.

In the PEA design, run-of-mine material will be coarse crushed at the mine site and mechanically sorted to increase the head grade of material transported to the mill.

Material received at the mill will be cone-crushed and conveyed through the feed storage silo to the primary grinding circuit. The conventional rod mill and ball mill grinding circuit will prepare the feed to flotation where value metals will be recovered sequentially by froth flotation to separate copper and zinc rougher concentrates. Zinc rougher tails will report to final tailings.

The copper rougher concentrate will be reground and floated in a single cleaning stage to make a final copper concentrate. Cleaner tailings will report to a scavenger flotation stage where the stage concentrate will be recycled to the head of the copper cleaner circuit regrind mill. The scavenger tails will be combined with the copper rougher tailings and conditioned for zinc flotation.

The zinc rougher concentrate will be reground and floated in two stages of counter-current cleaning with a cleaner scavenger stage. The concentrate from the second cleaner stage will be the final zinc concentrate while the second cleaner tails are combined with scavenger concentrate and recycled to the regrind mill at the head of the cleaning circuit. The scavenger tails will report to the final tailings, together with the tails from the zinc rougher.

Both copper and zinc concentrates will be thickened at site and further dewatered in batches through a pressure filter to prepare final product that will be transported for sale.

Neither Tower nor Rail mineralized material requires the use of cyanide, thus eliminating a safety and environmental risk.

Based on the metallurgical characterization testwork the following recoveries have been used in the PEA.

Table 8: Mill Recoveries (%)

Cu Recovery to concentrate	97
Zn recovery to Cu concentrate	17
Au recovery to Cu concentrate	55
Ag recover to Cu concentrate	55
Zn recovery to Zn concentrate	74
Au recovery to Zn concentrate	8
Ag recovery to Zn concentrate	8

Next Steps

Using the base case assumptions, the PEA indicates that the Project has technical and financial merit. Additional work has been identified related to addressing the main Project risks, as well as furthering the field work, metallurgical test work, mining, infrastructure engineering studies and financing required to support advancing the Project.

Rockcliff has plans to review and explore the geological potential of the Tower and Rail Properties for additional resource including the T3 anomaly and Rail extension targets.

Outside the Project area, Rockcliff will continue to develop the hub and spoke strategy by examining the potential at the Bur, Last Hurrah and Copperman Properties.

A webinar is planned for early 2021 to discuss the details of this PEA.

PEA PROJECT DETAILS

Project Preparation

The PEA is prepared in accordance with National Instrument 43-101, Standards of Disclosure for Mineral Projects ("NI 43-101") for Rockcliff by BESTECH and associate organizations with Qualified Persons representing various technical fields of expertise.

The PEA includes Inferred Mineral Resources that are considered too speculative, geologically, to have the economic considerations applied that would enable classification as Mineral Reserves.

The PEA was prepared through the collaboration of the following firms:

BESTECH, Stantec, P&E Mining Consultants Inc., AECOM, Wil-Solve and RockEng. These firms provided Mineral Resource Estimates, design parameters and cost estimates, process facilities, major equipment selection, reclamation, permitting, and operating and capital expenditures. The following table summarizes the contributors and the respective area of responsibility.

Table 9: PEA Contributors and Responsibilities

Consulting Firm	Area of Responsibility
BESTECH	● Process plant capital costs and operating costs ● Electrical and IT infrastructure design and costs ● Design and costs of utilities and infrastructure including on-site roads ● Material transport and General and administration operating costs ● Sorting and waste rock management infrastructure design and costs ● Financial Analysis and overall NI 43-101 Technical Report integration
Stantec	● Mining capital costs and operating costs ● Mine and mine infrastructure design ● Mine development and production ● Mobile fleet selection ● Cutoff Grade
P&E Mining Consultants Inc.	● Geological modelling ● Mineral Resource Estimates ● QA/QC on geological drilling and logging
AECOM	● Hydrogeology ● Environmental studies, permitting and closure costs ● Regulatory context, social considerations, and anticipated environmental issues ● Tailing assessment
Wil-Solve	● Metallurgical test work development and analysis ● Mass balance ● Process plant design and major process equipment selection

Consulting Firm	Area of Responsibility
RockEng	● Geotechnical site characterization ● Ground support requirements ● Crown pillar design ● Portal design ● Sill and rib pillar design ● Evaluation of mining methods ● Infrastructure siting

Qualified Persons

The PEA has been prepared by BESTECH. Each of the contributors to the PEA is a "Qualified Person" within the meaning of NI 43-101 and are independent of Rockcliff for purposes of NI 43-101. The scientific and technical information contained in this news release pertaining to the PEA has been reviewed and approved by each of:

Samantha Espley, P. Eng, FCAE
Mickey Murphy, P. Eng, Mining
Steve Wilson, P. Eng, Metallurgy
Eugene Puritch, P. Eng, FEC, Mineral Resource Estimate
Kathy Kalenchuk, P. Eng, Mining Geotechnical
Steven Langille, P. Eng, Infrastructure
Clifton Samoiloff, B.Sc., EP(CEA), Environnent

NON-IFRS FINANCIAL PERFORMANCE MEASURES

This news release and PEA includes certain non-IFRS financial measures common to the mining industry such as initial capital cost, sustaining capital cost, total C1 cash cost per tonne milled and per pound of copper equivalent metal produced, C1 + sustaining cash costs per tonne milled and per pound of copper equivalent metal produced. These measures are not recognized under IFRS and do not have a standardized meaning prescribed by IFRS. These measures do not have a meaning prescribed by IFRS and are therefore unlikely to be comparable to similar measures presented by other issuers. Each of these measures used are intended to provide additional information to the user and should not be considered in isolation or as a substitute for measures prepared in accordance with IFRS.

About Rockcliff Metals Corporation

Rockcliff is a Canadian resource development and exploration company, with +1,000 tonne per day leased processing and tailings facility as well as several advanced-stage, high-grade copper and zinc dominant VMS deposits in the Snow Lake area of central Manitoba. The Company is a major landholder in the Belt which is home to the largest Paleoproterozoic VMS district in the world, hosting mines and deposits containing copper, zinc, gold and silver. The Company's extensive portfolio of properties totals approximately 4,500 square kilometres and includes seven of the highest-grade, undeveloped VMS deposits in the Flin Flon -Snow Lake Greenstone Belt.

For more information, please visit http://rockcliffmetals.com
YouTube: Rockcliff Metals Corp.
Twitter: @RockcliffMetals
LinkedIn: Rockcliff Metals Corp.
Instagram: Rockcliff_Metals
Facebook: Rockcliff Metals Corp.

About BESTECH

The BESTECH organization is fully committed to bringing effective solutions into the world through dedicated consulting services and extraordinary teamwork. BESTECH works with a range of mining clients, from

juniors to the majors, achieving outstanding results using a multi-disciplinary engineering team. BESTECH's innovative and agile project management process allows the project team to pivot and achieve results in the most efficient means possible and on-point to the latest data and information. BESTECH's results also demonstrate the depth of knowledge and expertise with talented designers, engineers, managers, and the in-house systems and processes. BESTECH is proud of a track record of providing leading-edge solutions and fit-for-purpose designs that meet or exceed each client's expectations. The team's values, technical know-how, and processes for service delivery yields efficient and profitable results. That is why global mining and industrial clients have chosen to work with us for more than 25 years.

Cautionary Note Regarding Forward-Looking Statements:

This news release contains "forward-looking information" within the meaning of applicable Canadian securities laws . Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as "plans", "expects", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes", or the negatives and / or variations of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur", "be achieved" or "has the potential to". In particular, the forward-looking statements in this press release include, without limitation, statements regarding: future projected production, capital costs and operating costs, recovery methods and rates, development methods and plans, commodity prices and Mineral Resource Estimates. Statements relating to "Mineral Resources" are deemed to be forward-looking information, as they involve the implied assessment that, based on certain estimates and assumptions, the Mineral Resources described can be profitably produced in the future.

Forward-looking statements are based on the certain assumptions opinions and estimates as of the date such statements are made, and they are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include: delays resulting from the COVID-19 pandemic, changes in market conditions, unsuccessful exploration results, possibility of project cost overruns or unanticipated costs and expenses, changes in the costs and timing of the development of new deposits, inaccurate resource estimates, changes in the price of copper or zinc, unanticipated changes in key management personnel and general economic conditions. Mining exploration and development is an inherently risky business. The Company believes that the expectations reflected in the forward-looking statements are reasonable but no assurance can be given that these expectations will prove to be accurate and results may differ materially from those anticipated in the forward-looking statements. For a discussion in respect of risks and other factors that could influence forward-looking statements, please refer to the factors discussed in the Company's Management Discussion and Analysis for the year ended March 31, 2020 and subsequent quarterly financial reports under the heading 'Risk Factors'. These factors are not, and should not be construed as being exhaustive.

Accordingly, readers should not place undue reliance on forward-looking statements. The forward-looking information contained in this news release is expressly qualified by this cautionary statement. Any forward-looking information and the assumptions made with respect thereto speaks only as of the date of this news release. The Company does not undertake any obligation to publicly update or revise any forward-looking information after the date of this news release to conform such information to actual results or to changes in the Company's expectations except as otherwise required by applicable legislation.