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CONSTANTINE METALS' PALMER PROJECT MAY NOT BE ECONOMICALLY VIABLE
Independent Analysis Shows Project is "Highly Speculative" With A "High Level of Inherent Project Risk"

(Haines, Alaska) An independent analysis of Constantine Metal's Preliminary Economic Assessment for its Palmer Project casts doubt on the project's economic viability. Constantine-Palmer is a high sulfide zinc-copper deposit in the headwaters of the Chilkat River, upstream of the Tlingit village of Klukwan and the coastal town of Haines. The analysis found the project to be "highly speculative" and "highly optimistic" with a "high level of inherent project risk." The analysis highlights underestimation of costs, acid mine drainage, fluctuating metals prices, and lack of a barite market as major risks.

"Constantine's assessment is based on unsupported assumptions, a highly speculative plan to sell barite, and overly optimistic estimates of metals prices and operating costs," said Chris Zimmer of Rivers Without Borders. "Constantine's stock price has been on a steady decline since the assessment was released in July 2019, so there must not be much investor confidence in the company. This project is risky for investors and risky for Haines to pin its hopes on as a revenue source."

Jim Kuipers, chief consulting engineer at Kuipers & Associates with over 35 years of experience in the mining industry, conducted the analysis of Constantine's July 2019 Preliminary Economic Assessment (PEA) for Rivers Without Borders. The analysis concluded:

- The PEA is based on unproven mineral resources that are "speculative" and "do not have demonstrated economic viability."
- Constantine's plan to sell barite, a waste product at similar mines, is "highly speculative."
- Constantine's cost estimates assume no acid mine drainage that would require treatment, but "there is reason to believe this assumption will not be correct."
- There is "a high likelihood of exceeding the estimated capital and operating costs, potentially by significant amounts (i.e. up to 50%)."
- "the Palmer Project, due to its high dependency on zinc prices, might prove to be uneconomic."

Kuipers finds the marketability of barite, used in oil and gas drilling, "is not adequately supported." Expected U.S. demand is fully met by existing mines that produce barite from high-grade ores. Kuipers points out "the Greens Creek Mine in Alaska, which contains barite as a secondary mineral similar to the Palmer deposit, has never produced barite as a product." Constantine's projected price for barite, $220/ton, is highly optimistic, given a current price of $77/ton. If barite cannot be sold, the tailings capacity would need to be increased by about 25%. The PEA does not address the costs for this.

"Constantine's barite isn't an asset. It's a liability. Constantine has no buyers for barite, no port, and no justification for its assumption that barite prices will triple. Constantine will end up storing barite as tailings, just like Greens Creek does, which will increase costs and reduce revenues," said Jessica Plachta, Executive Director of Lynn Canal Conservation. "This was true before the COVID virus, and now with the expected reductions in oil and gas drilling, it's even truer."

Without barite, the post-tax internal rate of return (IRR), a key economic indicator, drops from 21% to 14%, while pre-tax IRR goes from 24% to 18%. According to Kuipers, “many analysts…consider an IRR of 20% to be the viability benchmark for new mining projects considering the inherent risks.”

“Remove barite from the equation and the Palmer proposal doesn’t meet one major commonly accepted investor standard for risk. And with barite, it barely exceeds that minimum return of 20%,” said Zimmer. “The stock market did not respond well to the release of the PEA and now in the depressed economic climate, investors will be even more leery of such risks.”

The PEA acknowledges the project’s economics are most sensitive to metal prices, zinc specifically. Future forecasts for zinc consumption do not suggest significantly increased demand. There is a significant likelihood that future zinc prices may be lower than Constantine predicts. In that event, the Palmer Project might prove to be uneconomic.

Kuipers disputes Constantine’s assumption that tailings and waste rock will not produce acid discharge that would require treatment. “The Greens Creek mine which is noted as similar elsewhere in the PEA also originally predicted and was permitted on the presumption of no impacts to water quality or long-term water treatment, however today it is recognized that impacts to water quality did occur at the Greens Creek mine and as a result, mitigation measures including long-term treatment, exceeding 100 years, will be required and is included as part of the financial assurance.”

“The PEA is clearly underestimating costs. The company is making the unwarranted assumption that acid mine drainage will not be a problem, which leads to underestimating costs for both reclamation and water treatment. The assumption flies in the face of the experiences at other mines, such as Greens Creek,” said Zimmer.

Chilkat means “winter storage container for salmon” in the Tlingit language, and true to its name the Chilkat River sustains high-value rearing and spawning areas for all five species of Pacific salmon. Unique late salmon runs through February attract the largest concentration of bald eagles in the world to the Alaska Chilkat Bald Eagle Preserve, just downstream of the Palmer deposit. Department of Fish and Game data shows more than 90% of Chilkat Valley residents rely on salmon for subsistence. Chilkat River salmon also support important sport and commercial fisheries.

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