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Northern Dynasty: Biggest De-Risking Event In The Company's History

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by: Nathan Polidori

Summary

- Long-sought EPA preemptive veto lift for Pebble Mine Project has been granted implying EPA will ultimately approve the project.
- State and Local government permits are being applied for later this year. Approval soon to follow in early 2021.
- A valuation analysis puts NAK between \$8 and \$12 a share.
- EPA veto lift is the biggest de-risking event in the company's history as it paves a way to partnership.

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Review of the Project

The Environmental Protection Agency (EPA) has lifted the proposed determination on Northern Dynasty Minerals' (NAK) Pebble Mine project. This long-awaited preemptive veto lift is for a 20-year mine producing 75 million tonnes of ore per year. This ore consists of 315M pounds of copper, 350,000 ounces of gold, 1.8M ounces of silver, and 4.14M pounds of molybdenum per year. This amounts to 180,000 tonnes per day. Infrastructure to extract these materials will take about 4 years to prepare. This mine has a very low waste to mineralized material ratio of 0:2:1. This is the catalyst we have been waiting for. Our price target is \$3-5 a share until we receive news of partnership or buyout.

Pebble Project Permit Application Overview¹

- Conventional open-pit mining operation with 20 year project life
 - 75 million tons per year mined
 - 4 years construction
- Life of mine waste to mineralized material ratio 0.2:1
- 180,000 tons per day process rate
- Conventional froth flotation
- Annual production:
 - -660,000 tons of copper-gold concentrate containing -315 million lb copper & -350,000 oz gold
 - -16,500 tons of molybdenum concentrate containing -14 million lb molybdenum
- Project infrastructure:
 - 270 MW natural gas power plant
 - 83 mile transportation system includes ferry crossing
 - permanent port on Cook Inlet
 - 188 mile pipeline from existing natural gas infrastructure on Kenai Peninsula

As part of the EIS preparation process the NMFS will undertake a comprehensive alternatives assessment and consider a broad range of alternatives. NDM (through PLF) continues to advance engineering studies and has prepared some changes from the initial application which are reflected here and elsewhere in this presentation. NDM cautions that this may not be the ultimate development plan for the project and that a final development design has not been selected.

Northern Dynasty Minerals Ltd.
The Future of Mining

10

pebble

Figure 1. Northern Dynasty slide showing the details of their permit application. From NAK Presentation.

The permitting process up to this point has been tough, to say the least. As of 2008, this mine has been known as one of the world's most important mining assets. In 2011, the estimated resources contained in the mine increased by 1000% from 2001. Under the Obama administration, a preemptive veto was placed on Pebble for a hypothetical mine. This decision-making process motivated Northern Dynasty to spend \$150 million on environmental and socioeconomic studies so that future decisions are based on data rather than politics. NAK needs to secure permits on three levels (federal, state, and local). NEPA is the most rigorous standard in the world that a mine can pass and NAK is gaining their stamp of approval. This was performed by several agencies, including some Alaska organizations. Because of the history of misinformation, NAK decided to pursue federal approval first. This was to remove all doubt of the mine's future. The Draft Environmental Impact Statement (DEIS) issued by the Army Corps of Engineers declares that they see no substantive issues in their analysis. This sets up eventual approval. After Matthew Leopold, the General Counsel of the EPA visited the site and talked with stakeholders of Alaska, the EPA sent out a press release stating how wrong the Obama-era EPA was and that they were resuming consideration of the withdrawal of the restricted use of Pebble. Leopold stated, "Today's step is a move toward good government decision making..." He also wanted to reduce "confusion and uncertainty surrounding arcane regulatory processes." In his memo, he made the case for no public comment period. One of the reasons being they had already received 2.7 million comments to that date. This accelerated the process. Leopold recommended that the EPA invoke an "elevation" procedure which has been typical for the last 20 years near large aquatic resources like Bristol Bay. The standard procedure ensures the risks to aquatic resources are

understood and taken care of. Under the procedure, the EPA and Army Corps are to work together in approving the project. The EPA has lifted the veto which was the main roadblock, and we are not concerned about the elevation process. The rest of the permitting process will require less cash than the federal process.

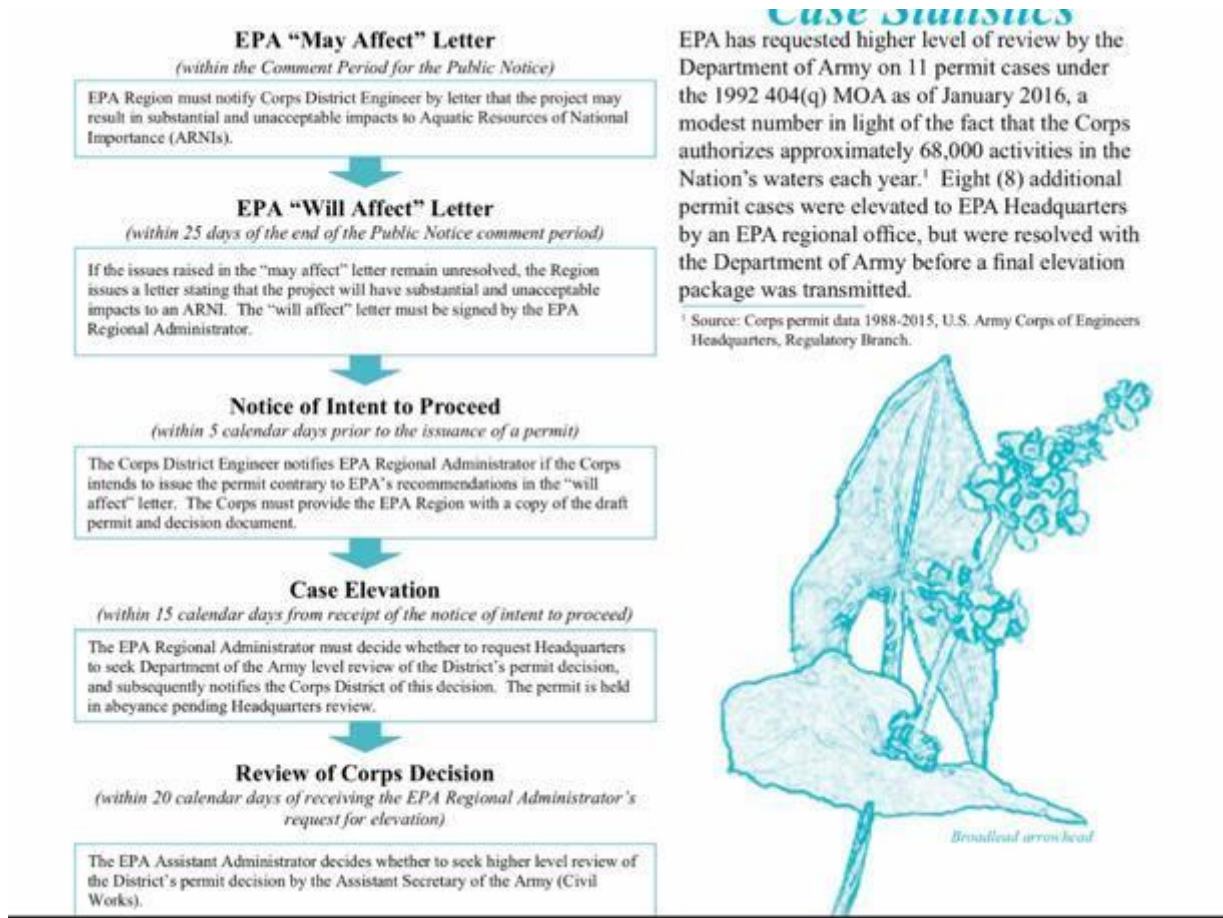


Figure 2. Past Case Analysis of EPA working with the Army Corps of Engineers (Elevation process).

It is likely that the process of lifting the Proposed Determination after Leopold's memo took a few weeks because of his request for no comment period. They may have reviewed the more than 90K comments from the DEIS. The above diagram illustrates important actions by the EPA and their effect on the Army Corps of Engineers decisions. Even if the EPA gives an unfavorable opinion about the project, the Army Corps can issue a permit. Although, Leopold has decided not to submit the elevation process language at this time. This is good news as it means he is not comfortable with changing from "may affect" to "will affect" language. This signals that the EPA wants to work with ACoE to strengthen the Final Environmental Impact Statement (FEIS). EPA is the only agency with authority to veto. With them indicating they want to help the process along, means it could be the first time this project experiences some "smooth sailing". We have seen opponents of this project push against NAK with everything they have, but now that we have realized these bullish events, Pebble presents a positive outlook with much of the risk removed.

Current Political Environment

Importantly, President Trump issued an executive order late 2017 stating, "It shall be the policy of the Federal Government to reduce the Nation's vulnerability to disruptions in the supply of critical minerals, which constitutes a strategic vulnerability for the security and prosperity of the United States." This strategy includes "streamlining leasing and permitting processes to expedite exploration, production, processing, reprocessing, recycling, and domestic refining of critical minerals" and "recommendations to streamline permitting and review processes related to developing leases; enhancing access to critical mineral resources; and increasing discovery, production, and domestic refining of critical minerals." Quite obviously, this policy benefits NAK.

Alaskan support has been in question over the years, but lately, it has been much stronger. NAK's next steps and objectives have much to do with local cooperation. In order to develop the Pebble mine, NAK will need to build significant infrastructure on and off-site along the roads, utility corridors, and other important logistical structures. They'll need crucial state and local partnerships and support.

The political environment suits them well. Recently elected Governor Mike Dunleavy has committed to de-politicize the permitting process and starts focusing on science. He defeated two other candidates who opposed the project. Throughout his campaign and post-election, he has praised mining for leading the charge in the Alaskan economy. Dunleavy commented that "We're going to be humming here in just a few years" while arguing that mining and mineral development are important items to the future of Alaska. He also stated, "Alaska is open for business." He emphasized how projects and opportunities have been overlooked in the past few years. CEO of NAK, Ron Thiessen said this about the current political environment, "The incoming governor has direct familiarity with mining. And I think it's important for us to stress that we're not seeking special treatment out of a new administration - all we're seeking is fair treatment." Dunleavy has also appointed Jason Brune, former executive director of the Resource Development Council and employee for Anglo American, who was a former Pebble Mine partner.

Voters also showed their support for mining as they rejected the anti-development "Stand For Salmon" act. 62.3% of the voters were against the act that its supporters posed as a vote against the Pebble Mine. It was among the most expensive political campaigns in Alaska and eclipsed the spending in the governor race. The land that the mine is on was acquired by Alaska in 1974 in a land exchange for the specific use of mineral development.

Current Local Support Environment

Local support is strong as NAK develops more partnerships. Alaska Peninsula Corporation (APC) formed an agreement where they would receive toll payments, share in profits, and have preferred contractor status. "Today's agreement not only secures access to the Pebble Project site for construction and operation of the proposed mine," said Thiessen. "It also represents a significant milestone in the developing relationship between Pebble and the Alaska Native people of the region. We have always said Pebble must be developed in partnership with the local people and institutions of southwest Alaska. We have more work to do in that regard, but a Right-of-Way Agreement with one of the largest Alaska Native landowners in the region goes a long way to bringing our commitment to life." NAK will receive lower-cost power, equipment, and access to roads connecting the nearby villages. APC Vice President of Corporate Affairs, Brad Angasan, said this of the partnership, "Among our leading priorities as an Alaska Native corporation is to manage and develop our lands responsibly, in a manner that creates employment opportunities for our shareholders but also respects our subsistence values and culture."

Another partnership was formed with Iliamna Natives Limited (INL). NAK secured the rights to use INL lands for Pebble. They have extensive land holdings next to the mining site. NAK is showing its commitment to providing value for the people of Alaska. Thiessen is quoted saying of the INL partnership:

Not only does today's announcement demonstrate that the Alaska Native landowners and those who live in closest proximity to the project support the work we are doing to advance Pebble in an environmentally sound and socially responsible manner, it also ensures they will benefit in a meaningful way from the jobs and other economic opportunities associated with the project."

This alliance also provides an important ferry landing site and road/utility corridor. Thiessen said:

We expect to secure additional mutually beneficial partnership agreements with other local and Alaska Native institutions as the project moves forward."

Further actions by NAK to strengthen ties in Alaska include their commitment to the Bristol Bay fisheries. Mining at Pebble is 200 miles away from the bay, and the Draft Environmental Impact Statement indicated that the mine will do no harm to the fisheries. Yet, NAK is still pledging to help the fisheries reach their potential. The nearby streams are not producing at full capacity and NAK sees opportunities to enhance production.

Natural Fish Habitat Constraints Create Mitigation/Enhancement Opportunities

Numerous Pebble/Bristol Bay streams not producing fish at full potential due to natural constraints:

- beaver dams & other barriers
- dewatered & relic channels
- low habitat complexity
- limiting water quality
- poor seeding due to low escapement

Deposit area watersheds are minor systems contributing negligible water & habitat in context of massive Bristol Bay area.

Significant opportunities exist to apply proven techniques to remove constraints & enhance fish production:

- agency friendly
- proven success with +50 years of fish habitat mitigation track record
- typically low technology measures
- cost-effective



Early June 2004



Late July 2004
Exact same location

Figure 3. Northern Dynasty's plans to help the nearby fisheries reach their potential. From NAK Presentation.

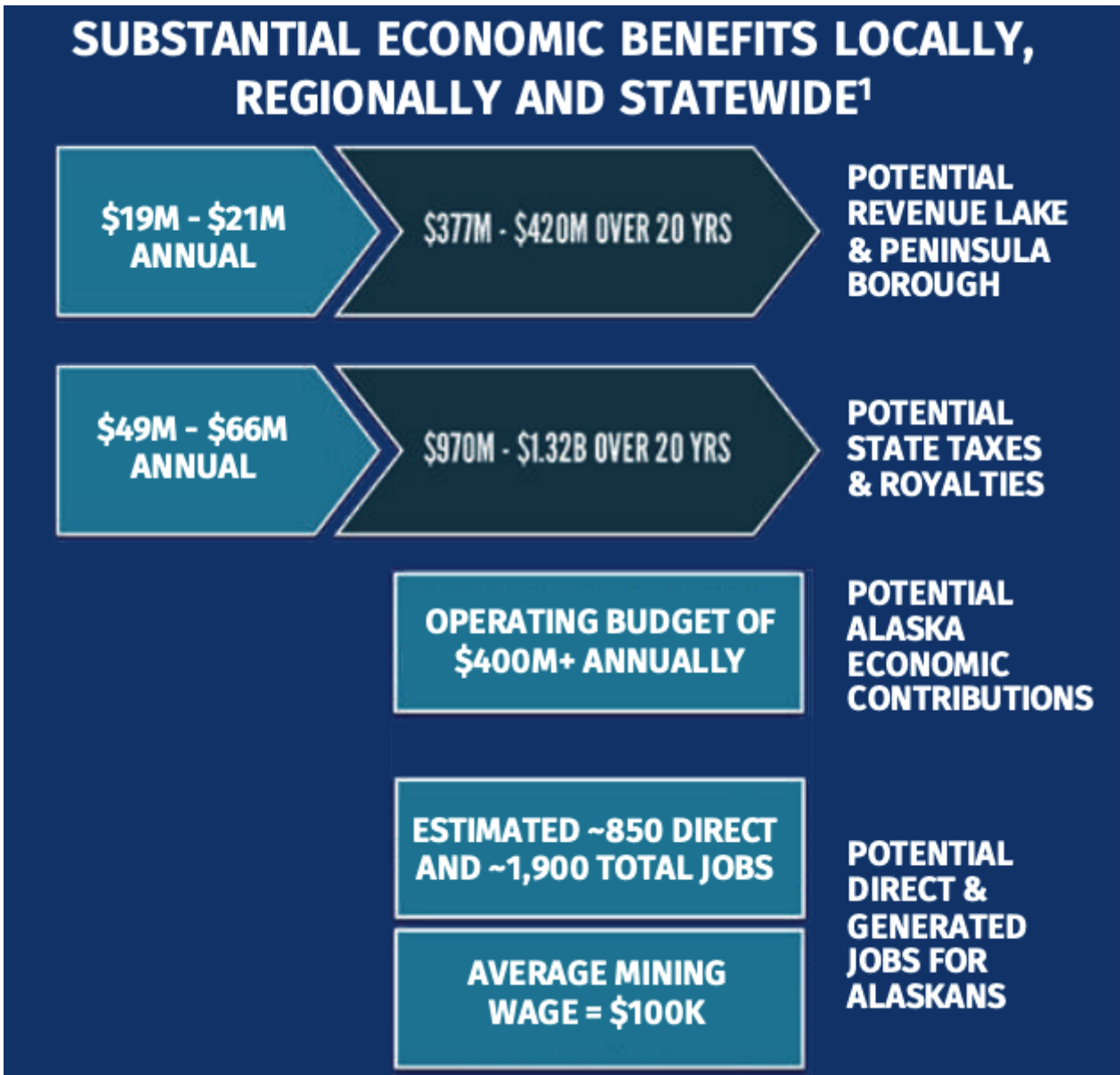


Figure 4. potential Economic benefits for Alaska and its citizens. From NAK presentation.

How Much Is It Worth?

From what we see, everything is in place. The preemptive veto has been lifted setting up the Record of Decision for ultimate approval. State and local permits are on their way, we expect early 2021. Important partnerships have been formed. Now, how much is it worth? Pebble is first in the world in contained precious metals and ninth in contained copper.

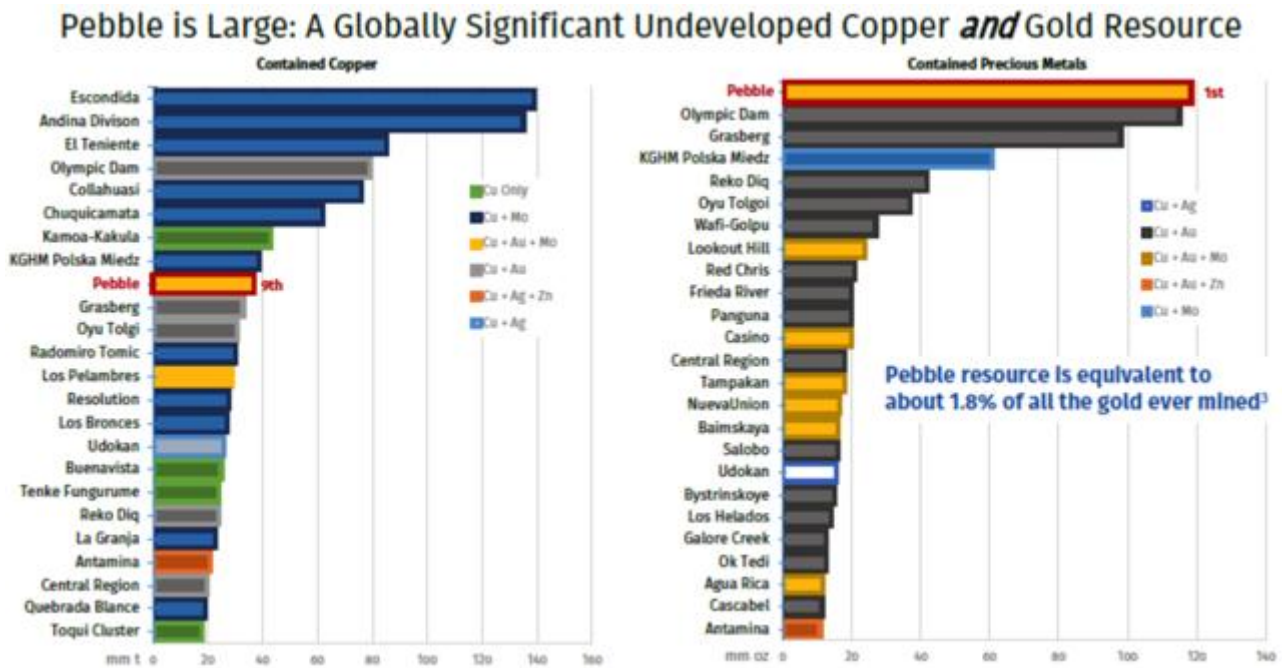


Figure 5. Graph depicting Pebble's ranking amongst mines across the globe. From NAK Presentation.

The plans NAK presented and are being approved are to extract only 11% of the total minerals contained. Based on this, we have done a Price-to-Sales analysis to determine a possible share price. The analysis consists of conservative estimates for commodity prices over the next 5-15 years. We used an industry average ratio of 1.75 for the low end and 2.5 for the high end. These estimates give us a share price of \$8-12 a share in the event of a takeover/buyout. It values the project between \$3 billion and \$5 billion. This doesn't account for the substantial potential for NAK. Copper and other commodity prices are forecasted to reach all-time highs in the next decade. The CRB commodity index has been at lows and the commodity cycle is flipping to an upward trend. Notably, electric vehicles and alternative energy will have a high impact on copper demand. Electric vehicles use 4x as much copper as combustion engines. Wind and solar energy take 12x as much copper than the current electricity distribution process.

In the midst of trade talks and developments, we have seen copper prices suppressed. As the 2020 election comes nearer, Trump is incentivized to make a deal with China in the next 6 months. This will have a positive impact on the price of copper. The China Manufacturing PMI and copper prices have a high correlation. As China's economy has struggled with the trade wars, they have demanded less copper. When uncertainty and tensions from the tariffs are done away with, China will vamp up infrastructure spending thus raising the demand and prices for copper. This will also put NAK in a better position to partner as executives can leverage elevated commodity prices.

Probably, the most significant opportunity for growth is their ability to apply for permits to mine more ore. As they prove themselves worthy to Alaskans, shareholders, and environmental agencies, they can be trusted to extract more precious metals than any mine in the world. They also believe there are more minerals than can be proven right now. Inferred Mineral Resource is the part of a mineral resource for which tonnage, grade, and mineral content can be estimated with a low level of confidence. These inferred numbers are huge (see Figure 6 below).

Copper – A Significant Structural Deficit is Forecast

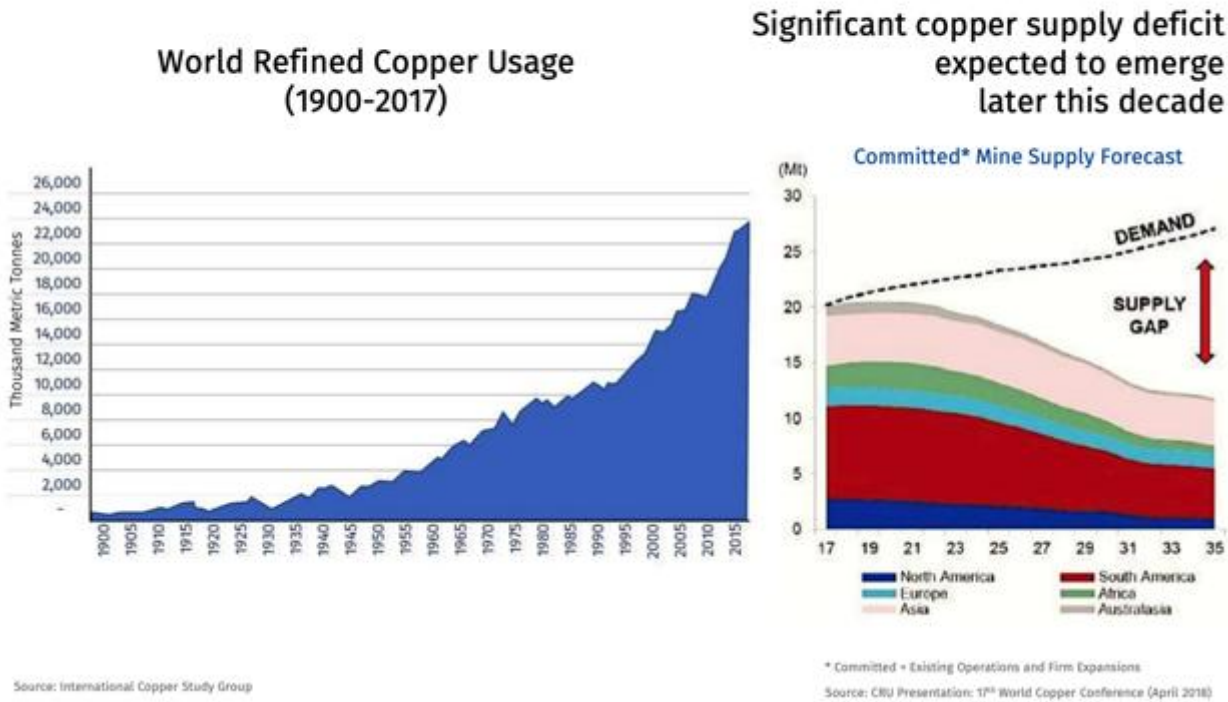


Figure 6. Copper demand is growing and supply is insufficient. This gap will only increase. From NAK presentation.

	Measured & Indicated	Inferred
Copper	57 B lb	25 B lb
Gold	71 M oz	36 M oz
Molybdenum	3.4 B lb	2.2 B lb
Silver	345 M oz	170 M oz

Figure 7. Contained precious metals within the Pebble site. Significant inferred resources. From NAK presentation.

NovaGold Resources (NYSEMKT:NG), another Alaskan mine that has passed the NEPA review, is a comparable mine. The company has a \$2.08B market cap and it is still awaiting state permits. It sights gold prices reaching \$2,500 an ounce and sold off its stakes in other mines to fund this gold-dominant project. It has a 50% stake in the Donlin Gold Mine which has 39M ounces of Gold. NAK has almost double the gold and owns 100% of the rights. NAK's most significant resource isn't even gold as it projects copper as 60% of its revenue. If we valued NAK based upon its gold potential alone, we are looking at a valuation near \$9B and a price per share of over \$20. This disregards all other precious metals. We could be looking at a valuation much higher as NAK looks to grow its operations.

Our analysis is in line with past partnership agreements as well. Both Anglo American (OTCPK:AAUKY) and First Quantum Minerals (OTCPK:FQVLF) were offered deals valuing the company at \$3B early in the permitting process. Now that the project has achieved approval, NAK is worth much more. Those deals were for 50% of Pebble for \$1.5B. Anglo spent \$750M and First Quantum spent \$37.5M before bailing because of intense lobbying by environmental activists. The initial preemptive veto set a precedent of the enmity the EPA has towards this project. Unfortunately, this has deterred partners and investors from being on the other side of these unabated activists. Anglo, Rio Tinto (NYSE:RIO), and First Quantum have each been intimidated away from following through with their partnership offers. Ultimately, this EPA go-ahead puts the reputational value of being involved with this opportunity in-line with the monetary value. We could see a smaller partnership agreement form to pay the rest of the costs of permitting and initial CAPEX. A possible deal would be \$225M for 10%. This would be a significant catalyst for the stock. Our price target upon this news would be \$4-7 a share.

Since the January 2018 Pruitt EPA reversal, the stock price has been suppressed so much that it has presented a partnering issue. With such a low market cap, it is difficult to find a company to pay such a high premium for 50%. Prior to this news, we could have expected a \$500M-50% deal. Now that we have this monumental catalyst, we no longer have this problem. EPA Approval, accompanied by an elevated market cap, establish a better environment to partner. We believe this will happen in short order.

Freeport-McMoRan (FCX) is a likely suitor to partner with NAK. As the mining company looks to diversify its assets in North America, the Pebble Mine looks to be the right asset. They currently have net operating loss carryforward for U.S. Federal taxes of \$6B that don't expire until 2036. This would offset the profits gained from the Pebble operations. This partner would be a worthy match for NAK because of Freeport-McMoRan's proven

track record and satisfactory reputation. Freeport-McMoRan is also looking to gain more exposure in its copper operations. As it cites in its 2019 Q1 presentation, the copper fundamentals look very attractive going forward.

NAK has expressed it is willing to accept a buyout as well. Barrick Gold (NYSE:GOLD) is a possible contender as their Executive Vice President of Exploration expressed interest in accumulating "copper opportunities". Northern Dynasty's primary objective is to partner and believes, with a high degree of confidence, it will do so. With the veto off their backs, NAK is in the driver seat when it comes to forming the next partnership or other financing agreement.

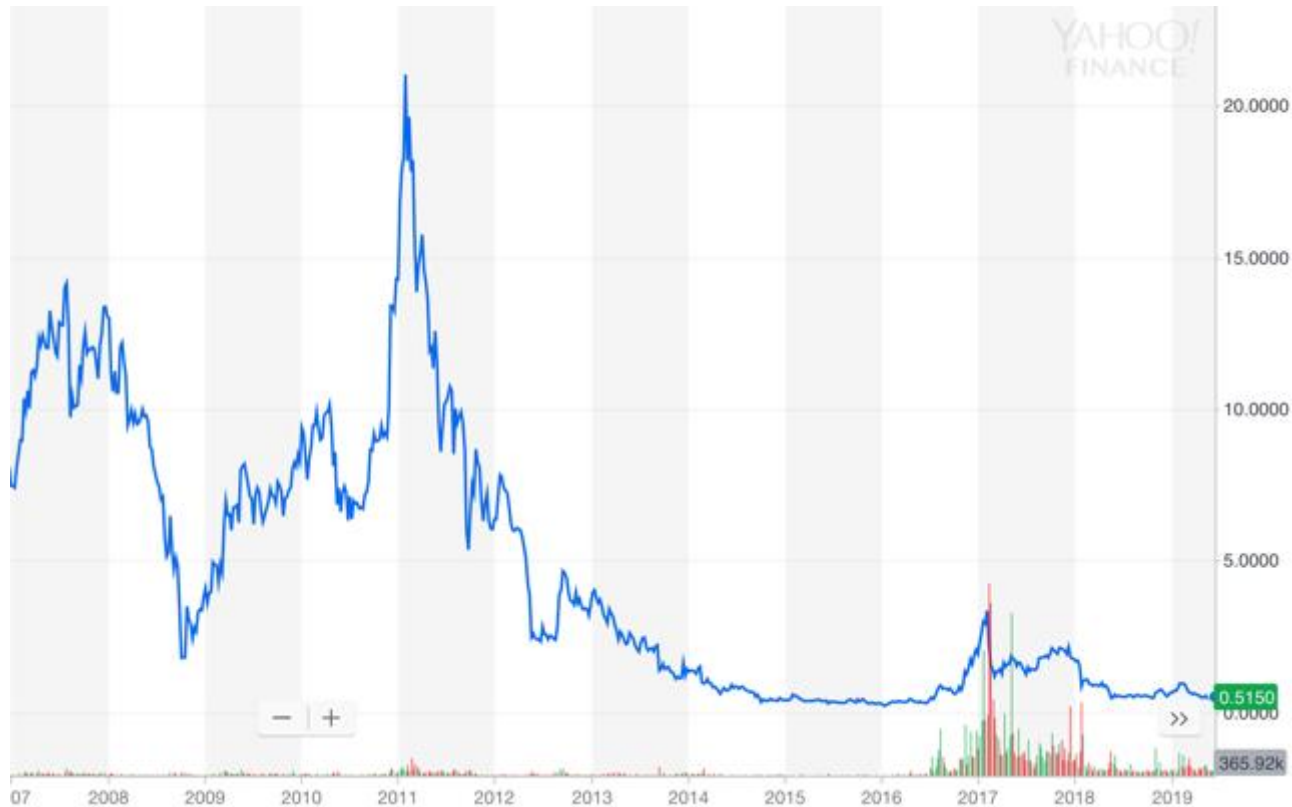


Figure 8. NAK price chart since 2007. Prices reached above \$20 a share in 2011. Chart from Yahoo Finance.

Disclosure: I am/we are long NAK. I wrote this article myself, and it expresses my own opinions. I am not receiving compensation for it (other than from Seeking Alpha). I have no business relationship with any company whose stock is mentioned in this article.

Comments (9)

ppipher

I have spent my summer on the Kenai Peninsula this year and it a most beautiful location. My first time here and fished for salmon throughout this area. What a great sportsman location. But there are few people in the area, and it has only been a growth area due to the Kenai River fishing. I hope the people see the value in this project and

hope that there is little to no environmental impact. I also own the stock so am also looking to profit from this mining operation. Should be a win win for both interested parties.

31 Jul 2019, 11:09 PM

jonmonroe8

Thanks for the article. I have been patiently waiting for something to happen. Just a matter of time. Your article gives me a handle of hope to hang my hat on.

31 Jul 2019, 08:18 PM

BrasilianBooty

If KL (Kirkland Lake) is worth \$40 a share, then NAK is worth \$100.

31 Jul 2019, 08:15 PM

Fred Global Investor

Fine analysis. I too see Freeport-Mcmorhan as good candidate for either JV or buy-out! The share value estimate will of course be all over the show, as we watch the world economy reflect Gold prices. Sensitivity Analysis scenarios would be almost anything, in this accord. The stars certainly are aligning for NAK. I invested some \$200 k a few years ago, and have been awaiting this long-awaited outcome. No history exists to my knowledge of humanity allowing such a rich deposit to remain in the ground unmined. I continue to believe as one who still wants to live and have "hope", that humanity will engineer, indeed create technologies that allow for the co-existence of varying extraction industries. I have resided in some 10 nations hitherto, and maybe it is easier to consider that many nation are considerably smaller than the land-mass of Alaska. In this, every nation must determine a way of creating a well-diversified economy. It remains prudent that as the world's population grows, that Alaska will be included in the mix and therein will need a medium-to-long-term economic policy. The ongoing of deteriorating US Democracy has been a worry to the world, and in this protracted case of Pebble....well the current socio-political divisiveness has circumscribed "Democracy". The US is certainly embroiled in their problems and nearly have prevented Alaska from being open for business. As it is, it takes forever for permitting to occur! In this, the changes within the operating policy of the EPA is NOT political, but legal. Therein, we are finally seeing justice and promise for Pebble. Let us hope this provides the investment community a ray of hope that the USA is indeed serious about its future. Critical Elements are critical to the security of the United States, and indeed for much of our planet. This flagship: Pebble, is crucial in illustrating that the USA is serious about feeding the mouths of Americans in the next generation.

31 Jul 2019, 08:12 PM

sportacus

thanks for the article. Your target is \$3-5 without a partnership or buyout. What is your timeframe to reach that target? thx

PS- I read that the decision to grant the permit to mine couldd be granted by next summer

31 Jul 2019, 06:47 PM

Nathan Polidori, Contributor

Author's reply » I believe we could see a partnership in short order so that timeline may be irrelevant.

31 Jul 2019, 09:18 PM

beabaggage

a fool and his salmon are soon parted..

31 Jul 2019, 06:33 PM

Oldwizkid

Just comes down to the money and jobs so keep the pollution low and it's win win. long NAK

31 Jul 2019, 06:26 PM

wwowwo

This is very positive. Let science and engineering resolve doubts and concerns.

31 Jul 2019, 06:04 PM