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RESEARCH REPORT

Special Newsletter for Professional Investors

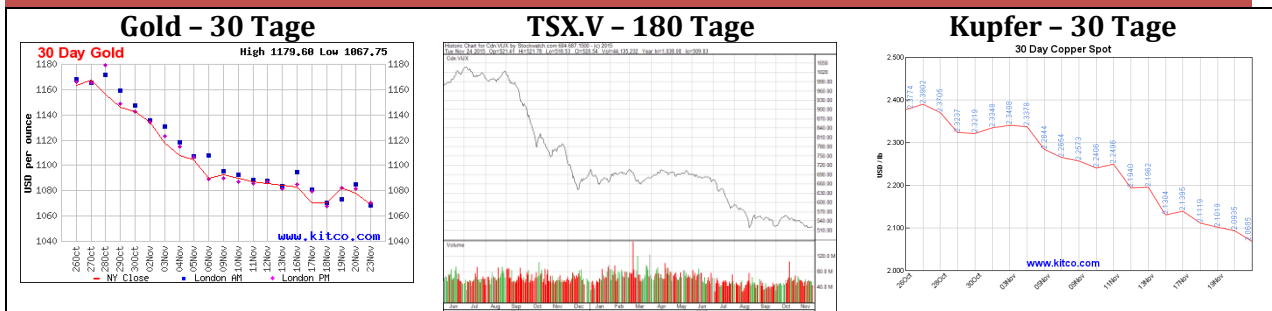
The Importance of Being Earnest: Valuing Advanced Gold Explorers and Developers

Powered by Cipher Research Ltd

25 NOVEMBER 2015

VALUING ADVANCED GOLD EXPLORATION & DEVELOPMENT COMPANIES

Market Monitor



Market News Headlines & Comments

- Gold Gains on Safe-Haven Demand as NATO-Russia Tensions Heat Up After Turkey Downs Russian Jet
- RAB's Philip Richards: Why a gradual bull market in metals is on its way
- Hedge Funds have never been this bearish on gold

M & A Activity

- Sunridge Gold Corp agrees To Sell Its 60% Interest in Asmara Mining Share Company to the Chinese company Sichuan Road & Bridge Mining Investment Development Corp. Ltd. for an upfront purchase price of US\$65 million cash
- Barrick Gold Corp agrees to sell a number of non-core assets in Nevada for \$720-million bringing total announced asset sales, joint ventures and partnerships worth \$3.2-billion since the start of 2015

Financing Activity

- Sabina Gold arranges \$2.2-million private placement
- Silvercrest Metals Inc closes oversubscribed private placement for \$2.5 million

Development Activity

- Lydian International Ltd. released results of a value engineering and optimization study for its Amulsar gold project in south-central Armenia
- African Gold Group, Inc. provides an update of the mineral resource and progress on the feasibility study for the Kobada gold project

VALUING ADVANCED GOLD EXPLORERS AND DEVELOPERS

Our previous letter concluded with an introduction to gold equities and the present opportunity to enter the market given their low valuations. This statement of course should be taken with an important caution, as not all gold equities are equal.

The most important risk to gold equities is Project Risk. The key to successful investing lies in selecting quality assets. Companies with quality assets provide maximum leverage in bull markets and can offer significant returns even in bear markets. Cipher has spent years researching and analyzing projects and has developed models for valuing projects and companies and strategies for successful investing.

This article focuses on advanced gold exploration & development companies. We examine a 24-year history of mergers and acquisitions to determine the real value of gold in the ground and to incorporate that value into our project and company valuation models.

PROJECT IS KING

The value of a mineral asset is derived solely from the prospect of ultimately extracting the mineral for a profit. In order to perform a fundamental valuation of mining companies the amount of mineral resources and ultimately reserves must be estimated.

Typically an exploration and development ("E&D") company sets out to make a discovery, drill off the discovery into a resources, engineer the resource to determine the amount that can be economically extracted (reserve) and then either raise money to build a mine or sell the asset to an existing mining company.

In the most basic terms, the value of a gold mineral project is equal to the number of ounces in the ground that will be potentially extracted times the value or price of an ounce in the ground.

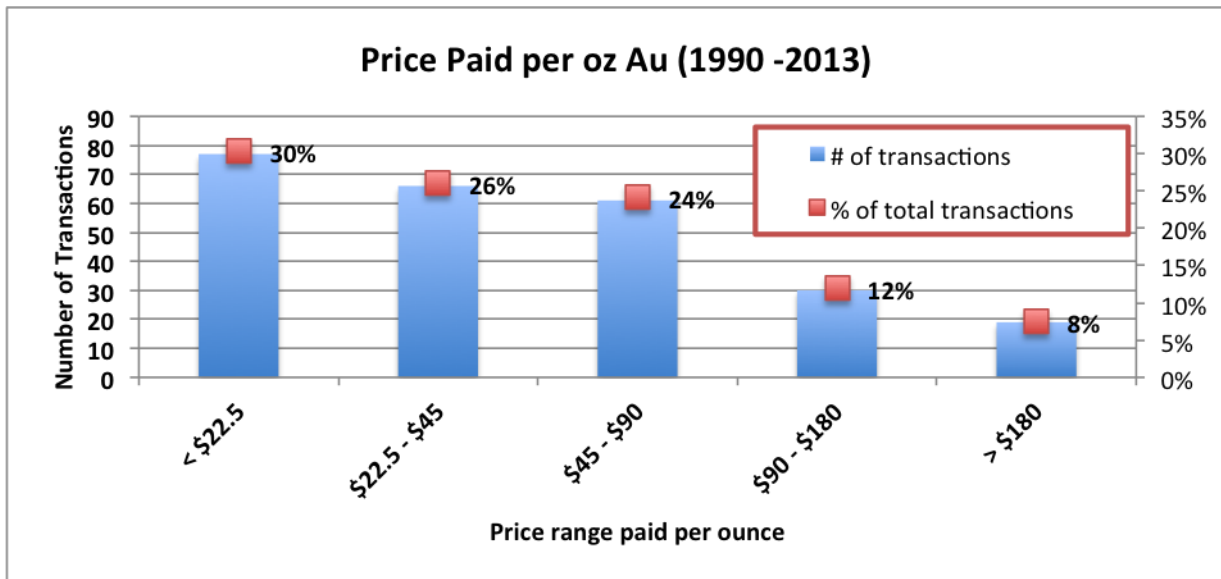
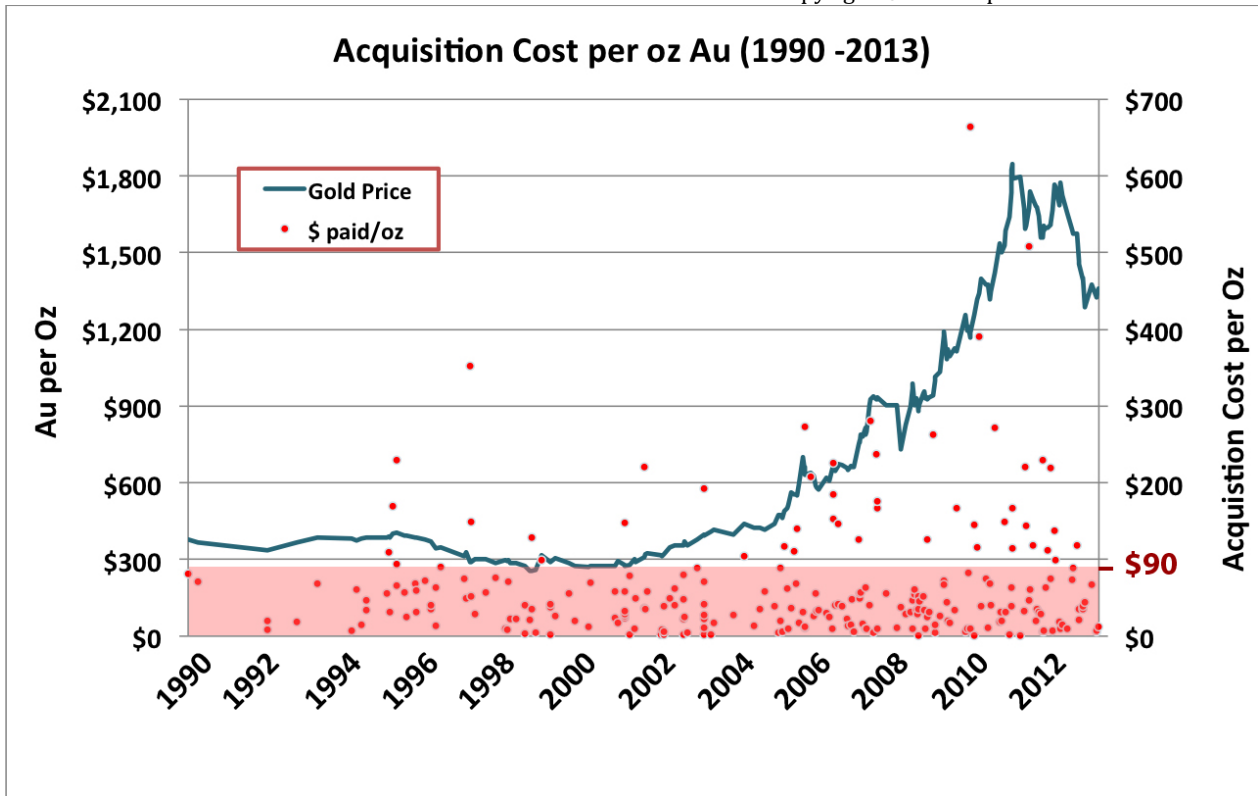
Value = Price x Quantity

VALUE OF AN OUNCE OF GOLD IN THE GROUND

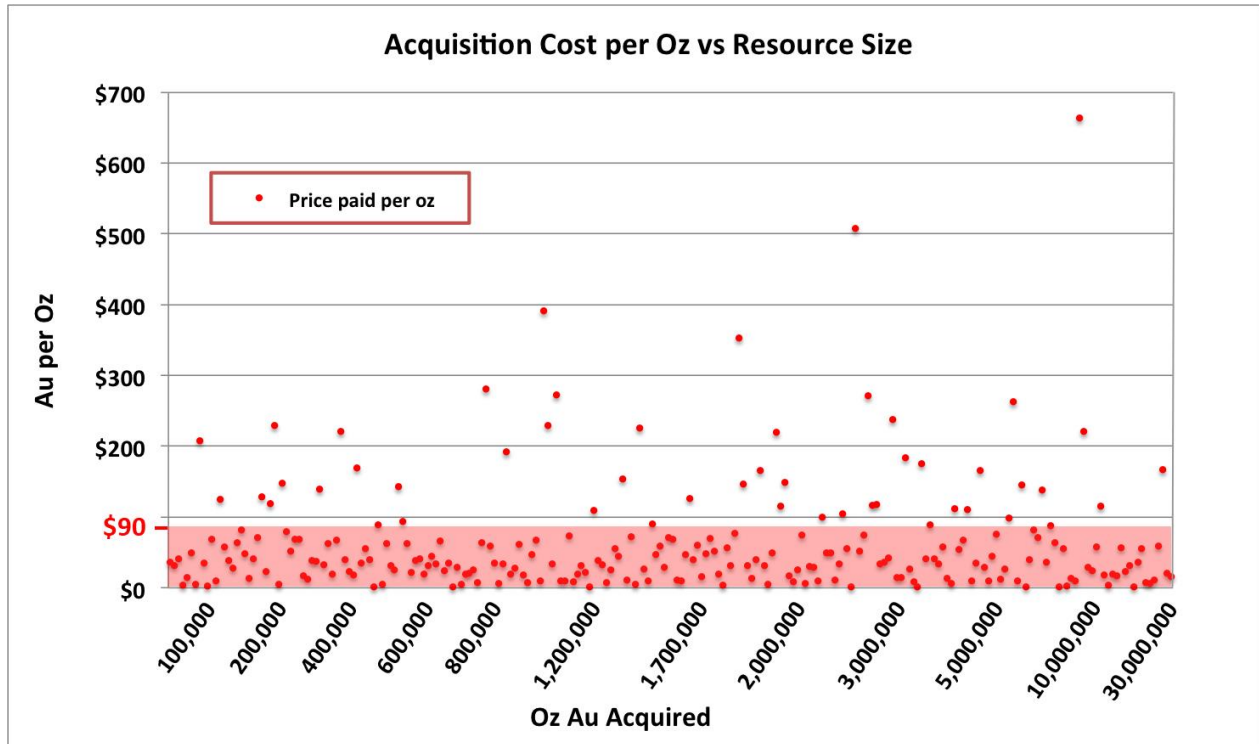
In its purest form an ounce of gold in your hand is currently worth around \$1,100 per ounce and gold in rock at concentrations or amounts not economic to mine gold is worth nothing. It therefore follows that "gold in the ground" is worth somewhere between \$0 dollars and the current spot price; the key is to find out exactly how much or at least significantly narrowing that range.

We use Comparable Transactions Method to benchmark the value of an ounce of gold in the ground.

Comparable transaction method relies on the principle of substitution; the mineral property being valued is compared with the transaction value of similar mineral properties, transacted on an open market. It is important to note here that while take-over is not the only option for advanced explorers & developers, it is the only one that can accurately be measured and therefore provide a reliable market value benchmark of an ounce of gold in the ground. We examined 253 transactions involving gold projects or companies owning a gold project, which were acquired in the period 1990-2013. The range and distribution of values are shown in the charts and tables below:



	All deals	Feasibility - Reserve Development	Preproduction - Production	Africa	Asia	Europe	Latin America	Canada/US
Price paid per oz Au Reserve & Resource								
Average	\$63	\$52	\$69	\$64	\$65	\$43	\$81	\$49
Median	\$39	\$34	\$40	\$34	\$47	\$39	\$41	\$31



The conclusions that can be drawn from the statistical analysis illustrated in the charts and tables include:

- 80% of all transaction occur at \$90/oz or less
 - over half (56%) occurred below \$45/oz
- With the exception of a few outliers, there is little or no correlation to the price of gold
- The average price paid for gold in the ground was \$63/oz
- The median price was \$39/oz
- Slightly higher premiums were paid for projects in development or production versus resource definition stage
 - Average price is 33% higher (\$52 vs \$69/oz)
 - Median is 18% higher (\$34 vs \$40/oz)
- There is surprisingly little difference in prices based on geographical location. (Although not measured we believe that this is a result of the cumulative effect of all risk premium attached – for instance high political risk in some jurisdictions may be offset by low permitting risk)
- The size of the resource was not positively correlated to the price paid (In other words miners pay for the quality of the project not the quantity of oz)

Having established the range of values of an ounce of gold in the ground, we turn our attention to the second variable: the **Quantity** of ounces in the ground.

Determining the size of the Recoverable Reserves/Resource is a two dimensional task; on one hand we want to count only the ounces which will be produced and sold at a profit and at the same time determine where they fall on the range of value.

The higher the level of confidence that the ounces in the ground will be economically extracted and processed into a finished gold bar, and the higher the projected profit margins from the ultimate sale of these gold bars, the higher the value of these ounces in the ground.

There are three types of engineering studies, listed in order of increasing level of confidence: Preliminary Economic Assessment; Pre-Feasibility Study; and Feasibility Study. Each report determines the overall grade and tonnage of the mineral resource and for the latter two, the amount of reserves that can be economically mined, processed, and recovered.

All studies are independent and strictly regulated, however they involve uncertainty and require the use of assumptions and estimates of many technical and economic variables such as projected selling price of the metal, cut-off grade (the ore grade above which the company makes money, below which would result in a loss), Capital Expenditure, Sustaining Capital, Operating Cost, difference between the global mineral deposit and its mineable portion (meaning that not all ounces categorized as reserve or resource will ultimately be mined. The minable portion is that amount which will be extracted at a profit.)

Slight changes in one or any of these variables can drastically change the projected overall economics. Additionally investors should keep in mind that there is a strong incentive for companies to persuade engineering firms to use more favorable assumptions in the economic calculations.

In our valuation methodology we examine all the assumptions and key variables used in technical reports and when necessary make adjustments to the resource model and the financial analysis. This is demonstrated with detailed case studies in a report from May 2015 published on CIPHER's website (http://www.cipherresearch.com/reports/150601_The-Real-Value-of-Gold-in-the-Ground.pdf)

In brief one of the case study shows that while an official Pre-feasibility Report on a gold deposit may indicate the presence of a global resource of 5,998,000 oz of gold in the ground and an after tax NPV (5%) \$409 million indicating substantial upside for investors, our analysis showed the reported numbers were highly misleading and adjustments were necessary. The assumed gold price for the life of the mine firstly overstated the projected revenues and secondly allowed for a lower cut-off grade to be used as the break even. When realistic adjustments for gold price and cut-off grade were made a lot of the ore became waste and the total **Quantity** of gold decreased by 65% from 5.9 to 2.1 million ounces.

So far we have demonstrated how we derive the **Value** of a project following the equation **Value = Price x Quantity**. **Price** is established based on historical M&A transactions and **Quantity** is determined from regulated third party technical reports but may require adjustments to key variables resulting in changes of the **Quantity** of ounces. The next step is to compare the **Value** of the project to the company's share price and market valuation - the result is CIPHER's time value model.

CIPHER'S TIME VALUE MODEL

To demonstrate our time value modeling we will use a junior mining company that was spawned from a shell in 2005 and was acquired by a mid-tier gold miner in 2013 for \$370 million. Net of cash acquired, the miner paid \$300 million for the junior's gold project.

The junior company was a shell that acquired a project with mineralized drill intercepts and a well-defined target area and did a 4:1 stock split at the end of Q3 2004, then completed a reverse takeover with 14.0 million shares outstanding.

The stock began trading in 2005 with a private placement at 25 cents that raised \$3.4 million and positioned insiders, friends, and family. This was soon followed by another small raise for \$2.0 million at 63 cents that again placed those closely connected with the company.

The company delivered encouraging drill results in 2006 and completed a large brokerage raise at \$1.17 for \$14.5 million. At that point, it had 43.3 million shares outstanding and had risen \$20.0 million via the public markets for an average price of 46 cents.

Subsequently, the company raised \$300 million by issuing a total of 56.7 million shares at an average price of \$5.31 for \$300 million.

These financings included a \$75 million bought deal at \$12.80 during the top of the gold market in late 2011. It was led by two of Canada’s largest brokerage firms.

Here is a history of the share capital and moneys raised as detailed in year-end fiscal statements:

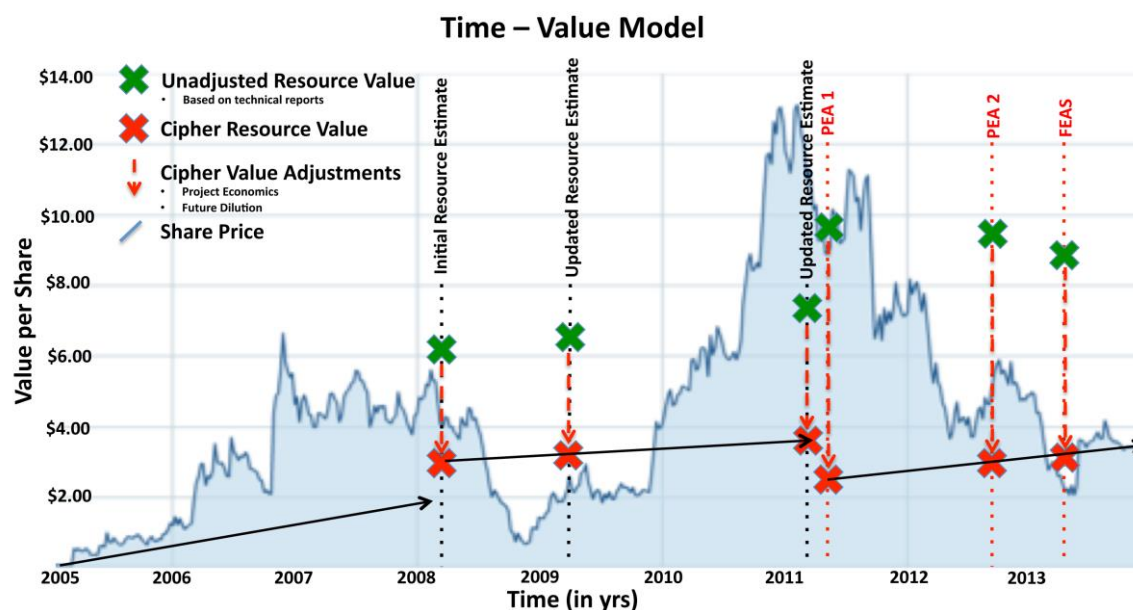
Date	Share O/S	Share Capital	Shares Issued	Ave Price	\$ Raised
30-Sep-04	3,251,619	\$4,743,033	3,251,619	\$0.00	\$0
30-Sep-04	13,981,466	\$4,743,033	10,729,847	\$0.00	\$0
30-Sep-05	27,673,378	\$8,179,403	13,691,912	\$0.25	\$3,436,370
31-Dec-05	30,815,253	\$10,154,798	3,141,875	\$0.63	\$1,975,395
30-Sep-06	43,261,828	\$24,703,421	12,446,575	\$1.17	\$14,548,623
30-Sep-07	54,740,238	\$61,772,099	11,478,410	\$3.23	\$37,068,678
31-Dec-09	57,161,890	\$70,354,790	2,421,652	\$3.54	\$8,582,691
31-Dec-10	75,219,349	\$143,960,232	18,057,459	\$4.08	\$73,605,442
31-Dec-11	84,016,582	\$235,034,032	8,797,233	\$10.35	\$91,073,800
31-Dec-12	99,904,050	\$325,566,869	15,887,468	\$5.70	\$90,532,837
31-May-13	99,973,216	\$325,828,861	69,166	\$3.79	\$261,992

The gold deposit was ultimately acquired by a mid-tier mining company for a total value of \$370 million, or \$300 million net of the \$70 million cash on hand. The junior had raised \$320 million during its eight-year lifespan for a total return of 13.5%. It spent \$250 million to acquire, explore, and engineer the project and sell-out to a miner.

In analyzing its history, the founders and other early investors acquired 43% of the company at an average price of \$0.46 per share. If they had held onto all of their shares until the takeover occurred, the return would have been over 700% on their investment over a seven-year period.

Investment bankers and brokers would have collected fees in cash and/or broker warrants on the public offerings of over \$300 million and on the \$375 million take-over.

The investors who bought in for a total of \$300 million or 94% of the total money raised and acquired 57% of the shares at an average price of \$5.31 did not fare well at all. They lost on average over 30% of their investment, never mind the poor souls who were part of that \$12.80 private placement on a gold deposit whose real resource value was never worth more than its acquisition price of \$3.70 per share. Let’s explore that idea in more detail using Cipher Research’s time-value modeling in the chart below:



- The **blue** line is the actual share price of the target company
- The first three **green Xs** are the resource values for three published resource estimates divided by the number of shares outstanding at the time. The resource values here are derived by number of ounces in the global resource **as reported by the companies** times \$90
- The last **three green Xs** are the unadjusted resource values for three engineered resources studies (two PEAs and the Pre-Feasibility divided by the number of shares outstanding at the time. The values of the engineered resource studies are equal to the NPV **as reported by the companies**
- The **red Xs** represent Cipher Research's per share valuation after the necessary adjustments were made for project stage, various economic factors, and the future dilution required in financing the company to its next milestone. The Cipher Resource Value represents the upper limits of what we deem the company's intrinsic value. The company would be considered a "buy" when below this level, "cautious hold" when slightly above this level and a "sell" when significantly above.

Note that the unadjusted resource values (**green Xs**) represent the value of the project as it would commonly be perceived by the market. Most investors assume that the resource estimates and/or NPVs published by an independent engineering firm are an accurate representation of a project's value.

This is generally not the case. In fact, consulting engineering firms operate in a highly competitive business environment and are hired by clients with the expectation that they will tailor technical reports to the client's needs and desires.

Have you ever come across a *negative* feasibility study? Remember for every failed mine, there was a positive feasibility study.

For this reason, investors must scrutinize engineering reports carefully and often make adjustments to assumptions and key variables to get a more accurate value for the project at any particular point in time This company was one of the many companies evaluated by Cipher Research and represents a good case study of a quality asset, which was worth buying into but rarely in its history did it offer value investors a real chance to make money.

As already mentioned, the company was sold for \$3.70 per share, valuing ounces in the ground well below the Unadjusted Resource Value promoted to the market but within the Ciphers Range of Value. Moreover the modeling shows that for almost its entire history the company was trading above its intrinsic value.

This company is unfortunately not a unique case. Management and other early investors, brokers and finders are the groups that were able to ensure profits from their involvement in the company and naturally took advantage of irrationally exuberant markets. Investors also had opportunity to make money if they were wise enough to buy and sell at the right time. Of course there was always someone on the other end of these transactions, meaning that most investors would have lost money.

In conclusion, our advice to investors is to scrutinize any information presented to them by or on behalf of an exploration and development company. If third party advice is required, ensure that it is unbiased and competent.

For further insight, we kindly suggest you view our three short videos on this subject. They are available on our website, CipherResearch.com.

For more insights and information on this and various other topics related to the metals and mining markets, please contact us at:

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