

# Rise Gold Provides Information on Technical, Regulatory, and Environmental Aspects of the Idaho-Maryland Gold Project

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Vancouver, May 17, 2019 - [Rise Gold Corp.](#) (CSE: RISE) (OTCQB: RYES) (the "Company") is pleased to provide information regarding technical, regulatory, and environment aspects of the Idaho-Maryland ("I-M") Gold Project ("Project").

Exploration drilling is ongoing and results from recently completed holes will be announced pending finalization of assay results. Visible gold has been noted in several of the veins intersected.

The Idaho-Maryland Gold Mine, located entirely on private land, was once the second largest lode gold producer in the entire United States with a total past production of 2,414,000 oz of gold at an average mill head grade of 0.5 oz per ton (17.1 gpt) from 1866-1955 and production rates of up to 129,000 oz of gold per year.<sup>1</sup>

The major vein systems include:

Idaho #1: past production of 935,000 oz gold at a mill head grade of 1.12 oz per ton (38.6 gpt)

Idaho #3: past production of 686,000 oz gold at a mill head grade of 0.60 oz per ton (20.4 gpt)

Brunswick: past production of 793,000 oz gold at a mill head grade of 0.27 oz per ton (9.3 gpt)

The Company strongly believes that the I-M Gold Project has the potential to once again become a significant producing gold mine.

The Company acquired and invested significant capital into the Project because Nevada County is a superior mining jurisdiction with respect to mineral resource potential and political and regulatory risk.

In conjunction with its ongoing and successful exploration drill program, the Company has been investigating various aspects of the Project in relation to future permitting for commercial mining. This work has further reinforced the Company's confidence that a major underground gold mine could be permitted and built in a timely manner with a predictable outcome.

## Land Title

The Property consists of mineral rights on 10 parcels, including 55 subparcels, totaling 2,800 acres (1,133 hectares) with all mineral rights being contiguous below 200 ft (61 m) of surface.

Mineral rights pertain to all minerals, gas, oil and [Mineral Deposits Ltd.](#) of every kind and nature beneath the surface of all such real property, together with all necessary and convenient rights to explore for, develop, produce, extract and take the same, subject to the express limitation that the fore-going exception and reservation shall not include any right of entry upon the surface of said land, as expressed in the recorded Quitclaim Deed.<sup>2</sup>

The company owns 175 acres of M-1 Light Industrial zoned private surface land. The Company believes this surface land would be sufficient to re-open the Idaho-Maryland Mine.

## Existing Infrastructure

The Idaho-Maryland Gold Project has important infrastructure in place which would be beneficial to re-opening of an underground mine.

The New Brunswick vertical shaft is believed to be in good condition and extends to 3,400 ft below surface. A concrete shaft bin remains in place, although the headframe and hoist have been removed. The previous headframe was 135 ft in height and designed to accommodate hoisting of 2,000 tons per day from 5,000 ft depth. The previous hoist used 6 ton skips at a hoisting rate of 1,250 ft per minute. The historic hoist capacity is likely sufficient for a new operation but could be augmented by increasing hoisting speed or skip capacity.

The shaft has stations at thirteen levels from the B580 to the B3280 levels. Skip loading pockets are present on six major levels at the B1300, B1450, B1600, B1880, B2300, and B3280 levels. It is believed that most tunnels in the volcanic rocks of the Brunswick Mine should be in relatively good condition due to the geotechnical characteristics of this unit. There are numerous tunnels on each level which can be re-used and provide close access to numerous zones of known high-grade gold mineralization.

The Rise Gold property adjacent to the New Brunswick shaft previously hosted a major commercial lumber mill and 55,000 ft<sup>2</sup> of industrial buildings. All buildings have subsequently been removed. The Property has a leveled area of approximately 40 acres and a large water-recycle pond which was constructed in 1988. The pond has a surface area of approximately 3.7 acres and a design capacity of approximately 40 acre-feet. Records indicate that the pond is lined with a 2 ft layer of clay and was designed by a registered civil engineer.

### Conceptual Project Design

The Company has evaluated various aspects related to the potential reopening of the mine in the future.

A general description of a conceptual project design, at similar production levels as historically achieved, is provided as follows:

1. Deep underground mine with production below 1,000 ft from surface.
2. Throughput of +1,000 tons per day, the historic production rate at shutdown in 1942.
3. High-grade gold mine. Scheduling mining of highest-grade gold mineralization available preferentially.
4. Re-use of New Brunswick vertical mine shaft. Shaft is from surface to 3,400 ft depth.
5. Construction of new headframe at New Brunswick shaft.
6. Construction of a second shaft from underground to surface, constructed in segments using Alimak raising or raise boring. Second shaft to be used as a service shaft and secondary escape and extend to the B3280 level.
7. Construction of two ventilation raises by raise boring from surface to the B900 level to allow mechanized mining.
8. Construction of new mineral process plant on surface producing gold concentrates using gravity and flotation concentration methods.
9. Cemented paste backfilling of underground voids.
10. Filtered (dry) sand-tailings and crushed rock to be used as engineered fill.  
No liquid tailings or tailings dams.

### Zoning Regulations

The Property is located on private land in Nevada County, California and is therefore subject to the Nevada County Land Use and Development Code ("the Code").

Subsurface Mining is an allowed use subject to approval of a Use Permit.<sup>3</sup>

Surface work incidental to an underground mine is an allowed use in M1 districts subject to approval of a Use Permit and Reclamation Plan and where the property is zoned ME.<sup>4</sup>

## Nevada County Use Permitting

It is anticipated that Nevada County would be the lead agency responsible for processing and approval of a commercial mining operation at the I-M Gold Project.

Although other permits from other government agencies would be required, the Use Permit from Nevada County is the only discretionary permit required.

Nevada County processes numerous Use Permits every year, averaging 10-12 new applications per year.

Nevada County has a recent track record of approving and granting Use Permit's for mining projects, including:

Newmont Mining Corporation - North Star Water Treatment Facility

Use Permit granted in 2015.

Discharge of treated mine water from the underground North Star Mine into Wolf Creek

<https://www.mynevadacounty.com/1102/North-Star-Water-Treatment-Facility>

Hansen Brothers Greenhorn Creek Mining Expansion

Use Permit granted in 2017.

Expansion of sand and gravel mine located within and on the banks of Greenhorn Creek

<https://www.mynevadacounty.com/597/Hansen-Brothers-Greenhorn-Creek-Mining-E>

Blue Lead Gold Mine

Use Permit granted in 2015.

Open pit gold mine with 74 acres of surface disturbance

<https://www.mynevadacounty.com/DocumentCenter/View/15226/Blue-Lead-Mine-Public-Hearing-PDF?bidId=>

Previous Permitting by Emgold

[Emgold Mining Corp.](#) previously held a lease on the I-M Project and engaged in several permitting efforts in relation to the Project.

In 1995 they successfully completed and received a Use Permit for the dewatering of the I-M Mine. This permit was un-used and subsequently expired in 2001.<sup>5</sup>

In 2005, Emgold commenced permitting of a large-scale ceramic tile manufacturing and underground mine at the I-M Project. Emgold proposed a 2,400 ton per day shallow underground room and pillar mine (starting at 500 ft below ground surface) in the meta-andesite volcanic rocks to provide feed stock for ceramic tile manufacturing. The factory was proposed to be annexed into the City of Grass Valley and the City was the lead agency for the project.

The only significant and unavoidable impact identified in the Environmental Impact Report ("EIR") was air quality emissions<sup>6</sup> related to the intensive use of energy to manufacture ceramic tiles from the volcanic rocks mined underground. The proposed ceramic tile manufacturing would have used 2.3 billion ft<sup>3</sup> of natural gas per year at the full production rate (18.5 MW) <sup>7</sup>.

Emgold may have succeeded in permitting its proposed ceramic tile manufacturing and underground mine; however, they ran out of funds necessary for the processing of the Final EIR.<sup>8</sup>

Emgold enjoyed strong public support for their proposed project. In 2006, an independent opinion poll showed 72 percent of Grass Valley residents in favor of the project and only 12 percent not in favor.<sup>9</sup>

[Rise Gold Corp.](#) has no interest in ceramic tile manufacturing and therefore the air quality effects of ceramic

tile manufacturing have no relevance to the I-M Gold Project.

## Employment and Economy in Project Area

The Company estimates a 1,000 tpd selective mining operation at the I-M would require ~300 direct employees. The mining industry has an indirect multiplier of ~3.9, meaning that 3.9 additional jobs are created from every direct job.<sup>10</sup> Using this factor, total employment created can be estimated at 1,500 persons, the majority of which would be in Nevada County.

The I-M Project is in an area of depressed economic conditions with high unemployment and poverty rates and thereby classified as a Qualified Opportunity Zone Tract. In the area surrounding the I-M Property, the unemployment rate is reported at 13.5% with a poverty rate of 31.3%. The adjacent tract area, including the City of Grass Valley, is reported to have an unemployment rate 10.7% with a poverty rate of 23.3%<sup>11</sup>. The average unemployment rate in United States is currently 3.8% with a poverty rate of 12.3%<sup>12,13</sup>. Grass Valley has a population of ~13,000 and Nevada County has a population of ~100,000 people.

## Mine Water Discharge

The Company's consultant has conducted detailed sampling in the New Brunswick Shaft of the water currently flooding the I-M Mine. The primary constituents of interest in the water samples are iron and manganese which are found at concentrations of approximately 1,600 micrograms per liter and 270 micrograms per liter, respectively.

The water quality of mine water discharge is subject to waste discharge requirements set forth in General Order R5-2016-0076<sup>14</sup>. The General Order NPDES permit is advantageous as an individual NPDES discharge permit would not be required, resulting in a predictable outcome for permitting, along with significant time and cost savings,

The water quality requirements under the General Order are similar or identical to California drinking water quality standards.

The Company's consultant performed bench scale tests which show the mine water can be effectively treated by aeration followed by filtration through a manganese dioxide filter. This is a simple and common water treatment method. The post-treatment water quality would meet or exceed the General Order requirements and California drinking water quality standards.

The Company has evaluated several discharge locations and believes a discharge of treated mine water to Wolf Creek would result in a predictable permitting outcome. Wolf Creek has large flows year-round of approximately 22,000 gpm. Wolf Creek is the point of discharge for numerous users included the Nevada Irrigation District, Grass Valley Waste Water (sewage) Plant and Newmont Mining's North Star mine water discharge. Newmont was recently granted a permit to discharge treated mine water into Wolf Creek (2015) using a passive water treatment system. Newmont's approved water discharge is to the same creek and water quality criteria as would be proposed at the Idaho-Maryland.

The historic groundwater inflow into the I-M Mine has been estimated to be in the range of 500 - 1,200 gpm<sup>15</sup> and therefore would be insignificant in comparison to the current flow in Wolf Creek.

## Ground Water Hydrology

Exploration drilling has shown the mineralized veins at the I-M Project are hosted in competent meta-andesite volcanic rocks. The hard rock lithology is relatively impermeable, and mine dewatering is not anticipated to have a significant effect on ground water levels.

Hydraulic conductivity decreases by several orders of magnitude (i.e. factors of 10) with depth. Shallower depths have higher hydraulic conductivity where more fractures are prevalent. As depth increases fractures

may be either less common or have smaller aperture (open) widths. As reported by Todd Engineers (2007), hydraulic conductivity values greater than 1.0 gallon per day per square foot (gpd/ft<sup>2</sup>) are generally found in wells shallower than 200 ft deep. In wells deeper than 620 ft, no hydraulic conductivity values greater than 0.1 gpd/ft<sup>2</sup> were identified, and most values were less than 0.01 gpd/ft<sup>2</sup>.<sup>16</sup>

The impermeable nature of the volcanic rocks and vein fractures is demonstrated at the Union Hill Mine. The Union Hill Mine is not connected but is in close proximity to the Brunswick Mine. During historic operations, the Brunswick Mine workings were completely dewatered while the Union Hill Mine was flooded to within 20 ft from surface<sup>17</sup>. The historical evidence shows that the dewatered mine working of the Brunswick Mine had very little or no effect on the water level in the Union Hill Mine. The Brunswick Mine workings were driven on the same fractures which hosted the veins and within a proximity as close as 135 ft. The mines remain hydraulically unconnected with the water level in the Union Hill Mine currently 165 ft above the water level in the Brunswick Mine.

Historically, there were concerns about several dozen domestic water wells surrounding the Brunswick Mine underground workings. The Company's consultants are currently engaged in a detailed study of the local groundwater hydrology. The Company does not anticipate significant impacts to groundwater from the dewatering of the mine. In addition, the Company could provide an extension of the potable water utility to this area at a relatively minor cost, which would guarantee that water supply to near-by residents would not be interrupted. An Environmental Impact Report for dewatering the I-M Mine, which studied hydrogeology in detail, was previously completed and Nevada County previously approved the Use Permit for the dewatering of the I-M Mine<sup>18</sup>.

The Idaho-Maryland Mine has been flooded and successfully dewatered multiple times in its history. Previous dewatering was done without the advantage of modern pumps. There is no reason to expect significant difficulty in dewatering the underground workings.

## Mineral Processing

Extensive historical information is available on mineral processing at the I-M Mine. Historic gold recovery of 96% was achieved at a coarse grind of ~80% passing 190 micron. Most gold was recovered by gravity (~67%) and the remainder by flotation which produced a concentrate averaging 3.9 oz gold per ton (134 gpt)<sup>19</sup>.

Historically, the I-M Mine produced gold dore on site. Due to the high value of the concentrate, the Company does not believe it necessary to produce dore onsite which would eliminate any need to use cyanide leaching. The Project would therefore not use cyanide and would not use mercury.

The mineralized veins at the I-M Project contain only minor sulphides, primarily pyrite, and the great majority of sulphide minerals would be shipped offsite in the gold concentrate.

## Geochemistry

Extensive sampling of the historic tailings on the Company's Centennial Industrial Site was undertaken by previous operators. All fifty samples taken from historic tailings show no elements of concern environmentally. Arsenic values range from <5 to 33 ppm with an average of 9 ppm. Kinetic testing by previous operators in 2010 shows the historic tails and the meta-andesite volcanic rock to be non-acid generating and non-metal leaching.

Some materials on the Centennial Site have elevated arsenic which are likely derived from historic custom milling of ore delivered from other mine sites. The Company is currently preparing plans to clean up these materials to re-develop the site as usable industrial real estate.

Rise is currently conducting geochemical test work on rock samples derived from its exploration drill core. Trace elements from 40 samples in the meta-andesite volcanic unit show no elements of environmental concern. Arsenic values range from 0.3 to 13.1 ppm with an average of 2.7 ppm. Sulphur values range from 0 to 0.5% with an average of 0.15%.

## Tailings/Rock Storage

The Company envisions that the processing plant would include a paste backfill plant with approximately 50% of the finest tailings being used as underground backfill. The remaining sand-tailings would consist of de-sulphurized fine sand with a minimum grain size of ~100 microns.

Barren rock from tunnelling in the meta-andesite volcanic rocks would be skipped to surface and crushed. The crushed stone and sand could be combined to produce an engineered fill with no environmental concerns.

There is area available on the Company's land holdings which could be substantially improved by placement of fill to create additional usable industrial land. The Company's own lands could utilize at least 10 years of engineered fill should the mine be put into production at the historic rate of 1000 tons per day.

## Noise

The Company is confident that noise from a commercial mining operation at the Brunswick Site can be mitigated to a level below the zoning requirements for Nevada County. Surface components of the project would be enclosed in engineered insulated buildings. Enclosure allows for the containment of noise and a predictable result at the property boundaries. During the current exploration drilling program, the Company has achieved excellent noise mitigation from the use of sound insulation and noise walls, reducing noise levels from 90 decibels at the drill head to less than 50 decibels at its property boundaries and consistently within compliance of the County noise regulations.

## Traffic

An underground mining project would not generate a significant amount of traffic. The Brunswick Site is adjacent to Brunswick Road. This road is a major local roadway with an estimated 15,000 average daily trips<sup>20</sup>. Any traffic generated from the I-M Project would be insignificant in comparison to the current use of these major roads. Brunswick road provides a direct connection to two State highways, Hwy 49 to the north and Hwy 174 to the south of the I-M Project property.

## Blasting Vibrations

The prediction of blasting vibrations is a well-developed science and blasting designs will produce predictable vibration results.

The Company is confident that an economic solution for underground blasting designs at various depths and locations will result in no significant impacts. In addition, the company expects that blasting vibrations will be well below the levels considered to be distinctly perceptible by persons on surface.

Human responses to vibrations induced from blasting are related to the peak particle velocity (PPV) (intensity of motion) and the exposure time. The particle velocity is related to the distance from the source (D) and the charge weight per delay (W).

Blasting vibrations (PPV) decrease exponentially with distance and therefore distance has a large effect on vibrations resulting from blasting.<sup>21</sup>

The potential areas of blasting at the I-M Project would occur at depth and over short durations, with entire blasts typically done within seconds and only occur two or three times per day.

Modern blasting allows exceptional flexibility to reduce the charge weight per delay. If necessary, the precision of electronic detonators allows each hole of an underground blast to be on a separate delay timing

and the timing of holes can be very close together, typically within 25 milliseconds. Charge weights per delay can therefore be significantly reduced versus conventional detonators.

A technical study for blasting vibrations was previously prepared for Emgold which provides useful information in regard to the potential impacts of blasting vibrations. It should be noted that Emgold planned to drive a ramp from surface and therefore would have blasted close to surface whereas [Rise Gold Corp.](#) does not anticipate any significant gold mineralization or blasting to be done above 1,000 ft below ground surface and the majority of mineralization is below 1,600 ft.

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- <sup>1</sup> AMEC Foster Wheeler Americas Limited. Technical Report on the Idaho-Maryland Project. June 2017.
- <sup>2</sup> AMEC Foster Wheeler Americas Limited. Technical Report on the Idaho-Maryland Project. June 2017.
- <sup>3</sup> Nevada County Land Use and Development Code Section L-II 3.21  
[http://qcode.us/codes/nevadacounty/view.php?topic=3-ii-3-l\\_\\_24&frames=on](http://qcode.us/codes/nevadacounty/view.php?topic=3-ii-3-l__24&frames=on)
- <sup>4</sup> Nevada County Land Use and Development Code Section L-II 3.22  
[http://qcode.us/codes/nevadacounty/view.php?topic=3-ii-3-l\\_\\_24&frames=on](http://qcode.us/codes/nevadacounty/view.php?topic=3-ii-3-l__24&frames=on)
- <sup>5</sup> AMEC Foster Wheeler Americas Limited. Technical Report on the Idaho-Maryland Project. June 2017.
- <sup>6</sup> Environmental Science Associates. Idaho-Maryland Mine Project, Environmental Impact Report. Oct 2008.
- <sup>7</sup> AMEC Americas Limited. Preliminary Assessment Technical Report Idaho-Maryland Mine. November 2004.
- <sup>8</sup> [https://docs.wixstatic.com/ugd/6bd037\\_6d5eedf818f74c31a7d47dbbc1cc05ac.pdf](https://docs.wixstatic.com/ugd/6bd037_6d5eedf818f74c31a7d47dbbc1cc05ac.pdf)
- <sup>9</sup> [https://docs.wixstatic.com/ugd/6bd037\\_ab6143bb765f4aa785d9c8350ca0c542.pdf](https://docs.wixstatic.com/ugd/6bd037_ab6143bb765f4aa785d9c8350ca0c542.pdf)
- <sup>10</sup> <https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/>
- <sup>11</sup> [https://www.cims.cdfifund.gov/preparation/?config=config\\_nmtc.xml](https://www.cims.cdfifund.gov/preparation/?config=config_nmtc.xml)
- <sup>12</sup> <https://www.bls.gov/news.release/pdf/empisit.pdf>
- <sup>13</sup> <https://www.census.gov/quickfacts/fact/table/US/PST045218>,
- <sup>14</sup> [https://www.waterboards.ca.gov/rwqcb5/board\\_decisions/adopted\\_orders/general\\_orders/r5-2016-0076.pdf](https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/general_orders/r5-2016-0076.pdf)
- <sup>15</sup> Environmental Science Associates. Idaho-Maryland Mine Project, Environmental Impact Report. Oct 2008.
- <sup>16</sup> Todd Engineers. Hydrogeologic Assessment Idaho-Maryland Mine. August 2007.
- <sup>17</sup> Clark, Jack. Gold in Quartz - The Legendary Idaho Maryland Mine. 2005.
- <sup>18</sup> <https://www.northernminer.com/news/emperor-lands-grass-valley-permit/1000095829/>
- <sup>19</sup> AMEC Foster Wheeler Americas Limited. Technical Report on the Idaho-Maryland Project. June 2017.
- <sup>20</sup> AMEC Foster Wheeler Americas Limited. Technical Report on the Idaho-Maryland Project. June 2017
- <sup>21</sup> Revey, Gordon. Blasting Impacts Assessment for Proposed Idaho-Maryland Mine Report. June 2006.

About [Rise Gold Corp.](#)

[Rise Gold Corp.](#) is an exploration-stage mining company. The Company's principal asset is the historic past-producing Idaho-Maryland Gold Mine located in Nevada County, California, USA. The Idaho-Maryland Gold Mine is a past producing gold mine with total past production of 2,414,000 oz of gold at an average mill head grade of 17 gpt gold from 1866-1955. Historic production at the Idaho-Maryland Mine is disclosed in the Technical Report on the Idaho-Maryland Project dated June 1st, 2017 and available on [www.sedar.com](http://www.sedar.com). [Rise Gold Corp.](#) is incorporated in Nevada, USA and maintains its head office in Vancouver, British Columbia, Canada.

Benjamin Mossman, P.Eng, CEO of [Rise Gold Corp.](#), is the qualified person for the technical disclosure contained in this news release.

On behalf of the Board of Directors:

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The CSE has not reviewed, approved or disapproved the contents of this news release.

#### Forward-Looking Statements

This press release contains certain forward-looking statements within the meaning of applicable securities laws. Forward-looking statements are frequently characterized by words such as "plan", "expect", "project", "intend", "believe", "anticipate", "estimate" and other similar words or statements that certain events or conditions "may" or "will" occur.

Although the Company believes that the expectations reflected in the forward-looking statements are reasonable, there can be no assurance that such expectations will prove to be correct. Such forward-looking statements are subject to risks, uncertainties and assumptions related to certain factors including, without limitation, obtaining all necessary approvals, meeting expenditure and financing requirements, compliance with environmental regulations, title matters, operating hazards, metal prices, political and economic factors, competitive factors, general economic conditions, relationships with vendors and strategic partners, governmental regulation and supervision, seasonality, technological change, industry practices, and one-time events that may cause actual results, performance or developments to differ materially from those contained in the forward-looking statements. Accordingly, readers should not place undue reliance on forward-looking statements and information contained in this release. Rise undertakes no obligation to update forward-looking statements or information except as required by law.

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