



EMGOLD Mining Corporation



# Idaho-Maryland Mine Technical Report

November 2002  
U885A



#### **IMPORTANT NOTICE**

This report was prepared exclusively for Emgold Mining Corporation (Emgold) by AMEC E&C Services Limited, (AMEC). The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in AMEC's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by Emgold only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on this report by any third party is at that party's sole risk.

## CERTIFICATE OF AUTHOR

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I, Stephen J. Juras, P.Geo., am a Professional Geoscientist, employed as Principal Geologist of AMEC E&C Services Limited and residing at 9030 161 Street in the City of Surrey in the Province of British Columbia.

I am a member of the Association of Professional Engineers and Geoscientists of British Columbia. I graduated from the University of Manitoba with a Bachelor of Science (Honours) degree in geology in 1978 and subsequently obtained a Master of Science degree in geology from the University of New Brunswick in 1981 and a Doctor of Philosophy degree in geology from the University of British Columbia in 1987.

I have practiced my profession continuously since 1987 and have been involved in: mineral exploration for copper, zinc, gold and silver in Canada and United States and in underground mine geology, ore control and resource modelling for copper, zinc, gold, silver, platinum/palladium and industrial mineral properties in Canada, United States, Perú, Chile and Russia.

As a result of my experience and qualifications, I am a Qualified Person as defined in N.P. 43-101.

I am currently a Consulting Geologist and have been so since January 1998.

From October 3, 2002 until October 11, 2002 I visited the Idaho-Maryland project in California for the purposes of reviewing pertinent geological data in sufficient detail to independently support the data incorporated into estimating the 2002 Idaho-Maryland mineral resource. This report was prepared under my direct supervision. I was assisted in my review by Patricia Nelson, REA, a Qualified Person in matters pertaining to environmental permitting, and Stuart Morris, P.Geo., R.Geo., a Qualified Person in the field of geology.

I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report and that the omission to disclose would make this report misleading.

I am independent of Emgold Mining Corporation in accordance with the application of Section 1.5 of National Instrument 43-101.



I have read National Instrument 43-101 and Form 43-101F1 and this report has been prepared in compliance with same.

Dated at Vancouver, British Columbia, this 1st day of November 2002.

A handwritten signature in black ink, appearing to read "Stephen J. Juras", is written over a horizontal line. To the right of the signature is a circular professional seal. The seal has a dashed border and contains the text "PROFESSIONAL" at the top, "PROVINCE of" in the middle, "S. J. JURAS" in the center, "BRITISH COLUMBIA" below the name, and "GEOLOGIST" at the bottom.

Stephen J. Juras, Ph.D., P.Geo.

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I, Stuart K. Morris P.Geol., am a Consulting Geologist and have been so since September 2001. I am a Professional Geoscientist retained as an associate by AMEC E&C Services Limited and residing at 121 South Spanish Trail Drive of rural community Veyo of the state of Utah in the United State of America.

I am a licensed non-resident member of the Association of Professional Engineers and Geoscientists of British Columbia and Registered Professional Geologist in the state of Arizona. I graduated from Brigham Young University with a Bachelor of Science degree in geology in 1978 and obtained a Master of Science degree in geology from Brigham Young University in 1980.

I have practiced my profession continuously since 1980 and have been involved in: mineral production and exploration for copper, gold, silver, lead, and zinc in the United States and Canada, in underground mine geology, ore control, resource modelling, resource and ore reserve estimations for copper, gold, silver, lead, and zinc in the United States, and Canada.



As a result of my experience and qualifications, I am a Qualified Person as defined in N.P. 43-101.

I served as a Qualified Person reviewing the geological interpretation and mineral resources. I reviewed segments of the supporting data for the resource estimation (Section 17) sufficient to verify the methodology. The method to calculate the resource estimation and supporting geologic interpretations are appropriate for this type mineral deposit. I also reviewed sections; 7, Geologic Setting; 8, Deposit Types; 9, Mineralization; and 10, Exploration. The information in these sections is consistent with the current knowledge of the geology of Idaho-Maryland property. I did not visit the project site. My work was under the direction of Stephen J. Juras, P.Geol.

I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report and that the omission to disclose would make this report misleading.

I am independent of Emgold Mining Corporation in accordance with the application of Section 1.5 of National Instrument 43-101.

Dated in Veyo, Utah USA, this 1st day of November 2002.

A handwritten signature in black ink, appearing to read "Stuart K. Morris".  
A circular professional seal for the Province of British Columbia. The outer ring contains the text "PROFESSIONAL" at the top and "GEO SCIENTIST" at the bottom. The inner circle contains the text "PROVINCE OF" at the top, "S.K. MORRIS" in the center, and "#P35066" below it. The words "BRITISH COLUMBIA" are written along the bottom inner edge of the seal.

Stuart K. Morris, M.Sc., P.Geol.





# EMGOLD MINING CORPORATION

## TECHNICAL REPORT

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### 1.0 SUMMARY

Emgold Mining Corporation (Emgold) has asked AMEC E&C Services Ltd. (AMEC) to provide an independent Qualified Person's review and evaluation of the Idaho-Maryland Project. The work entailed the preparation of a Technical Report as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects*, and in compliance with Form 43-101F1 (the "Technical Reports"). Stephen Juras, P.Geo., an employee of AMEC, served as the Qualified Person responsible for preparing the Technical Report. Information and data for the review and report were obtained from the Idaho-Maryland project site during a visit by AMEC on October 3 to 11, 2002. Additional information was obtained from the Emgold head office in Vancouver, B.C.

The Idaho-Maryland project is a structurally controlled, mesothermal gold deposit situated in the northern portion of the Sierra Nevada Foothills Gold Belt. It is located 2.5 miles (4 km) east of Grass Valley, Nevada County, within the State of California. This property comprises approximately 2,750 acres (1,113 ha) of mineral lands, with 37 acres (14.97 ha) of surface rights centered around the New Brunswick shaft, and 56 acres (22.65 ha) of surface rights west of the Idaho shaft. The mineral rights are defined as subparcels in a Quit Claim Deed. The mineral rights are restricted to a variable depth from surface and in general, are contiguous below 200 ft (60m) from surface. Emgold has an agreement with the mineral rights holders (BET Group) that includes a mining lease and option to purchase the property. The term of the lease agreement is five years commencing on June 1, 2002. During the term of the lease agreement, any production from the property will be subject to a 3% Net Smelter Royalty (NSR).

The shape of the Idaho-Maryland ore deposit is controlled by the regional-scale Weimar Fault (also known as the 6-3 Fault) and the district-scale Spring Hill Tectonic Mélange Zone. The Weimar Fault is a right-lateral wrench fault that transects an accreted terrane along its 50-mile (80 km) course. It truncates all structures of the Idaho-Maryland Mine and forms the blunt eastern termination of the wedge-shaped ore deposit. The varying styles of mineralization present at the Idaho-Maryland Project are typical of those commonly found in mesothermal lode gold deposits worldwide. At least four basic types of mineralization have been recognized to contain significant gold deposits. In order of importance, these include (1) gold-quartz veins, (2) mineralized black slate bodies, (3) mineralized diabasic slabs, and (4) altered, mineralized ultramafic schists. The veins consist primarily of quartz, which is milky white, massive to banded, sheared, and brecciated. Gold occurs as native gold, ranging from very fine grains within the quartz to leaves or sheets along fractures.



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Emgold defined a revised, comprehensive geological model for the project area. Key components to this model are: i) the concept of tectonic fragments or slabs within the Spring Hill Tectonic mélange; ii) a consistent structural interpretation, on both a property and local (stope) level, with specific definition of the Idaho Deformation Corridor and its make-up of a braided network of high-strain zones; and iii) identification of structural features that act as potential hosts to auriferous vein sets.

The late Jurassic Spring Hill Mélange unit comprises a chaotic assemblage of clasts dismembered from the Jurassic Lake Combie Complex and its underlying oceanic crustal basement. It is a district-scale structure that underlies a 4.0 mile<sup>2</sup> (10 km<sup>2</sup>) area and dominates the property geology. The mélange unit is 0.80 miles (1,300 m) wide, extends for 4 miles (6,400 m) in a 300° orientation, and crosscuts the regional structural grain. The serpentinite matrix of the mélange is well foliated and highly deformed. Locally it is comprised of a talc schist or talc + chlorite schist assemblage. The serpentinite matrix contains chaotic tectonic clasts or “slabs.” The fragments range from fist-size clasts to megaclasts up to 1.5 x 0.62 miles (2,400 x 1,000 m) in dimension, and are monolithologic to heterolithologic in composition. Slab lithologies vary from meta-volcanic flows and volcanoclastic units, fine grained metasedimentary units (cherts, slates), diabase and gabbro. The large *Brunswick Slab* borders the Idaho Mine to the south and extends eastward for 1.5 miles (2,400 m). All of the significant gold production from the Idaho-Maryland Mine was localized within the matrix and tectonic slabs of Spring Hill Mélange unit.

Idaho Deformation Corridor is a braided zone of high strain that extends along the entire length of the Idaho-Maryland ore deposit. The corridor averages 500 ft (150 m) in width and is traceable for 2.0 miles (3 km) along a 275° to 290° strike. The zone dips 60° to 70° S and extends to the deepest levels of the mine at 0.62 miles (1 km). Within the corridor are less strained blocks of ground, with the high-strain zones occurring in a braided pattern or network throughout. The Brunswick Slab defines the southern boundary of the high-strain zone for nearly its entire length. The L Fault forms the northern boundary. In general, the zone contains both linear and non-linear fault members and exhibits a dominant normal vertical displacement with a much weaker component of right-lateral horizontal displacement. The linear and non-linear fault members have strong deformational fabric, well-developed gouges, and host the large, high-grade oreshoots of the mine.

Four general structural features identified at the Idaho-Maryland property have been considered favorable configurations for developing gold mineralized vein sets. These are: 1) mine-scale boudinage neck features developed within the serpentinite matrix of the Spring Hill Mélange unit; 2) the occurrence of tectonic slabs within the serpentinite matrix of the Mélange unit; 3) local flexures and irregularities in the plane of the



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Weimar Fault Zone that create shattered quartz stockwork zones; and 4) high-grade vein arrays localized underneath prominent, shallowly dipping link fault/veins of fault duplexes.

The database to support the Idaho-Maryland mineral resource estimate contains over 36,000 gold assays, the majority of which were taken from underground samples (mostly channel samples). Those from diamond drill holes comprise only a minor portion of the assay database. The assay data reside as handwritten entries on assay plans (1" to 50 ft) for all mine levels. Drill hole assay data accompany the intercepts on these plan maps, and copies of assay certificates also are present for the final 10 years of production.

The samples were fire-assayed at former mine site laboratories. No records exist of any QA/QC program. Sample quality was inferred by the reconciliation of historic production records to underground sample data. These studies, as well as a recent investigation on mill-to-resource prediction show that the resource or reserve estimates consistently underestimated the amount of gold produced by milling, a discrepancy most likely reflective of sample size influence rather than laboratory technique. High nugget value deposits with coarse gold areas are best sampled with large sizes, which was not common practice at the time. Therefore, any estimates made using this historic data should include comparisons with values unadjusted and adjusted for the regular underreporting of grade (i.e., call factor).

AMEC believes that the comprehensive set of assay plans, supported by records of muck car stope samples and mapped geology data, as well as the detailed historical production records, all support the integrity of the assay data for the Idaho-Maryland project. These data are deemed suitable for use in mineral resource estimation. AMEC also checked data transcription onto assay plans from copies of original assay certificates and from assay plan to mineral resource worksheets and concluded that the data are sufficiently free of error to be adequate for resource estimation.

AMEC reviewed the mill operating statistics for 1934, 1936, 1937, 1938, 1941, and 1947. Results indicate stable overall gold recoveries and metallurgical response to gravity, flotation, and cyanidation:

- Overall gold recoveries ranged from 93.8% to 97.2%.
- Gold production using gravity recovery methods ranged from 61% to 69%, averaging approximately 65.4%.
- The ore contains approximately 1.5% to 2% sulfides. Gold produced via flotation of the sulfides ranged from 30.3% to 36.9% with an average of 33.4%.



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AMEC believes that the use of modern technology will result in gold recoveries that are consistent — and likely higher — than those achieved in the early milling circuits at the Idaho-Maryland mill in the 1930s and 1940s.

AMEC conducted a reconnaissance review of the distribution of gold mineralization at Idaho-Maryland. The observed distribution on cumulative probability plots shows typical lognormal trends. Each vein system does appear to have a unique grade distribution and that the higher-grade distributions (greater than 1 oz/ton (34 g/t) Au values) are an integral part of a system's population. AMEC recommends that Emgold conduct a more detailed statistical review of the gold assay data. The review, by vein system and mineralization type, would assist in future grade interpolation and in the selection of appropriate gold capping levels. Until such an analysis is undertaken, the resource estimates should be reported using uncapped grades. Exposure to extreme grades was evaluated by resource block and dealt with through classification protocol.

The 2002 mineral resource for the Idaho-Maryland property was estimated under the direction of Emgold's Qualified Person, Mark Payne (Registered Geologist 7067, State of California), using traditional longitudinal sections and 3-D geologic models by commercial mine planning software (Vulcan®). AMEC validated the evidence for the pertinent vein/structural interpretation data support and consistency. All examples based on the underground data demonstrated good data back-up and sound projection limits. The interpretations covering the drill hole intercepts also were sound and reasonably projected. However, the latter is hampered by the uncertainty in spatial location of the drill hole intercept due to the holes not having been down hole surveyed. AMEC also checked numerous resource blocks for correct tabulation of sample values, reasonable projection limits, and volumetric and trigonometric calculations. The checked blocks were properly constructed and calculated.

The mineral resource classification of the Idaho-Maryland deposits used logic consistent with the CIM definitions referred to National Instrument 43-101. AMEC assessed the criteria used by Emgold for this classification and generally agreed with them. Emgold's classification protocol was amended to classify mineral resources outlined by single drill hole intercepts as "inferred" and to downgrade any resource blocks that demonstrate a degree of uncertainty in the grade estimate due to the presence of numerous +1 oz/ton Au assayed samples (mostly originally measured resources downgraded to indicated resources). In the case of the latter condition, those blocks will remain in the downgraded resource category until such time that a proper investigation is carried out to set appropriate grade capping levels at Idaho-Maryland.



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The mineralization of the Idaho-Maryland project as of October 25, 2002, is classified as measured, indicated and inferred mineral resources. The classified mineral resources are shown in Table 1-1. The Idaho-Maryland mineral resource was reported at a 0.10 oz/ton Au cut-off grade. All estimated resource blocks equal to or greater than 0.10 oz/ton Au were tabulated in the summary.

The revised geologic model for the Idaho-Maryland site should be tested for new areas of mineralization throughout the project area. AMEC strongly recommends that Emgold test their deposit model by a surface-based diamond drill program on three to five priority targets. Each target will require several drill holes, approximately 600 ft (200 m) to 1,400 ft (425 m) in length. Eventually the exploration work will need to continue from underground stations. Plans for this phase are currently being evaluated in a preliminary assessment study. Best areas for relatively shallow, higher-grade gold mineralization occur around the Idaho shaft, in and around the Idaho Structural Corridor. Drilling access would be from an exploration decline. AMEC supports this exploration concept and planning efforts.

Permitting will be an important part of any future work. Two aspects of the project that need to be addressed in the permitting process are: 1) requirements for a surface-based exploratory phase, and 2) requirements for underground development. The exploratory phase may be exempt from certain regulatory requirements required for underground development. Such an alternative may allow surface-based exploration activities to proceed while work is in progress to permit the mining operations within six months of project initiation. Together, these processes indicate a schedule of between 12 and 24 months to meet the necessary environmental and permit requirements.



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**Table 1-1: Idaho-Maryland Project Mineral Resource Summary, October 25, 2002**

	True Thickness (ft)	Tonnage (tons)	Gold Grade (opt)	Gold (oz)	Gold Grade (opt) 1.44 MCF	Gold (oz) 1.44 MCF <sup>1</sup>
<i>Eureka Group</i>						
Measured Mineral Resource	6.5	17,000	0.18	3,000	0.29	5,000
Indicated Mineral Resource	5.7	41,000	0.27	11,000	0.37	15,000
<b>Measured + Indicated Mineral Resources</b>	<b>5.9</b>	<b>58,000</b>	<b>0.24</b>	<b>14,000</b>	<b>0.34</b>	<b>20,000</b>
Inferred Mineral Resources	9.5	393,000	0.21	81,000	0.30	117,000
<i>Idaho Group</i>						
Measured Mineral Resource	17.5	129,000	0.24	31,000	0.34	44,000
Indicated Mineral Resource	13.4	151,000	0.41	62,000	0.60	90,000
<b>Measured + Indicated Mineral Resources</b>	<b>15.3</b>	<b>280,000</b>	<b>0.33</b>	<b>93,000</b>	<b>0.48</b>	<b>134,000</b>
Inferred Mineral Resources	10.4	791,000	0.24	190,000	0.35	274,000
<i>Dorsey Group</i>						
Measured Mineral Resource	11.9	59,000	0.22	13,000	0.32	19,000
Indicated Mineral Resource	7.2	102,000	0.32	33,000	0.47	47,000
<b>Measured + Indicated Mineral Resources</b>	<b>8.9</b>	<b>161,000</b>	<b>0.29</b>	<b>46,000</b>	<b>0.42</b>	<b>66,000</b>
Inferred Mineral Resources	9.6	941,000	0.30	285,000	0.46	410,000
<i>Brunswick Group</i>						
Measured Mineral Resource	8.0	63,000	0.17	11,000	0.25	16,000
Indicated Mineral Resource	6.2	107,000	0.28	30,000	0.40	43,000
<b>Measured + Indicated Mineral Resources</b>	<b>6.9</b>	<b>170,000</b>	<b>0.24</b>	<b>41,000</b>	<b>0.34</b>	<b>59,000</b>
Inferred Mineral Resources	7.3	288,000	0.23	67,000	0.34	96,000
<i>Waterman Group</i>						
Measured Mineral Resource	70.7	831,000	0.15	127,000		
Indicated Mineral Resource	30.5	75,000	0.21	16,000		
<b>Measured + Indicated Mineral Resources</b>	<b>67.3</b>	<b>906,000</b>	<b>0.16</b>	<b>144,000</b>		
<i>Idaho-Maryland Project<sup>2</sup></i>						
Measured Mineral Resource 1	13.2	268,000	0.22	58,000	0.31	84,000
Measured Mineral Resource 2	70.7	831,000	0.15	127,000	0.15	127,000
Indicated Mineral Resource	12.5	476,000	0.32	152,000	0.44	211,000
<b>Measured + Indicated Mineral Resources</b>	<b>43.3</b>	<b>1,575,000</b>	<b>0.21</b>	<b>337,000</b>	<b>0.27</b>	<b>423,000</b>
Inferred Mineral Resources	9.6	2,413,000	0.26	623,000	0.37	898,000

1. MCF = Mine Call Factor (not applicable to Waterman Group resources). 2. Idaho-Maryland measured resources are split into two categories: 1. the Eureka, Idaho, Dorsey, and Brunswick Groups, and 2. the Waterman Group (stockwork/slate type ore).





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### 2.0 INTRODUCTION & TERMS OF REFERENCE

Emgold Mining Corporation (Emgold) engaged AMEC E&C Services Ltd. (AMEC) to provide an independent Qualified Person's review and evaluation of the Idaho-Maryland Project. The work entailed the preparation of a Technical Report as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects*, and in compliance with Form 43-101F1 (the "Technical Reports"). Stephen Juras, P.Geo., an employee of AMEC, served as the Qualified Person responsible for preparing this Technical Report.

Information and data for the review and report were obtained from the Idaho-Maryland project site during a visit to site by AMEC on October 3 to 11, 2002. Additional information was obtained from the Emgold head office in Vancouver, B.C.

Pertinent geological data were reviewed in sufficient detail to prepare this document. Stephen Juras, in addition to supervising the preparation of this document, conducted and supervised the review on the geological data. The following AMEC employees provided additional Qualified Person assistance:

- Patricia Nelson, REA, who investigated and reviewed matters pertaining to permitting in the State of California
- Stuart Morris, P.Geo., R.Geo. (Arizona), who reviewed matters concerning property geology and mineralization and mineral resources
- Alexandra Kozak, P.Eng., who conducted the review on metallurgical matters.

### 2.1 Terms of Reference

The Idaho-Maryland project is located in Grass Valley, California. The primary standard of measurement used in this report is the *U.S. Standards of Measurement*, as defined by the United States Department of Commerce, National Institute of Technology (NIST), in accordance with Appendix C of NIST Handbook 44. Where appropriate, metric conversions have been provided in parentheses. All grades are expressed in ounces per ton using the conversion factor 1 oz/ton = 34.287 g/tonne.

The Weimar Fault, discussed in Section 7.3.1, is a 50-mile long regional fault also known as the 6-3 Fault. It is referred to as such on some historical documentation, specifically in relation to the Idaho-Maryland mine workings and associated structural geology.



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### 3.0 DISCLAIMER

AMEC's review of the Idaho-Maryland project relied on the following reports, which were prepared by geological consultants:

- James Askew Associates, Inc. (1991): *Idaho-Maryland Mine, Nevada County, California – Technical Assessment.*
- D.D.H Geomanagement Ltd. (1996): *Report on the Exploration Potential of the Idaho-Maryland Mine Project.*

AMEC used information from these reports under the assumption they were prepared by Qualified Persons.

AMEC also relied on a legal report entitled "*Legal Title Opinion prepared for the Core Area Properties of the Idaho-Maryland Mine Project, Grass Valley Mining District, Nevada County, California*" (Galati & Associates, 1997) for its review of title and mineral rights. The report was used based on the assumption it was prepared by a Qualified Person.



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### 4.0 PROPERTY DESCRIPTION & LOCATION

#### 4.1 Location

The Idaho-Maryland project property is located 2.5 miles (4 km) east of Grass Valley, Nevada County, within the State of California (see Figures 4-1 and 4-2). This property comprises approximately 2,750 acres (1,113 ha) of mineral lands, with 37 acres (14.97 ha) of surface rights centered around the New Brunswick shaft, and 56 acres (22.65 ha) of surface rights west of the Idaho shaft.

The New Brunswick shaft at 39° 12' 42.5" N latitude and 121° 01' 03" W longitude marks the approximate center of the property. The U.T.M. coordinates of the shaft are 4,342,024 m north and 671,144 m east.

#### 4.2 Mineral Tenure

The Idaho-Maryland property consists of 2,750 contiguous acres (1,113 ha) of mineral lands, 37 acres (14.97 ha) of surface rights around the New Brunswick shaft, and 56 acres (22.65 ha) of surface rights west of the Idaho shaft. For an outline of the surface rights and mineral rights parcels, see Figures 4-2 and Figure 4-3, respectively. The mineral rights are defined as subparcels in a Quit Claim Deed. A summary of information from the Quit Claim Deed is in Appendix A. The subparcels are listed and described briefly in Table 4.1.

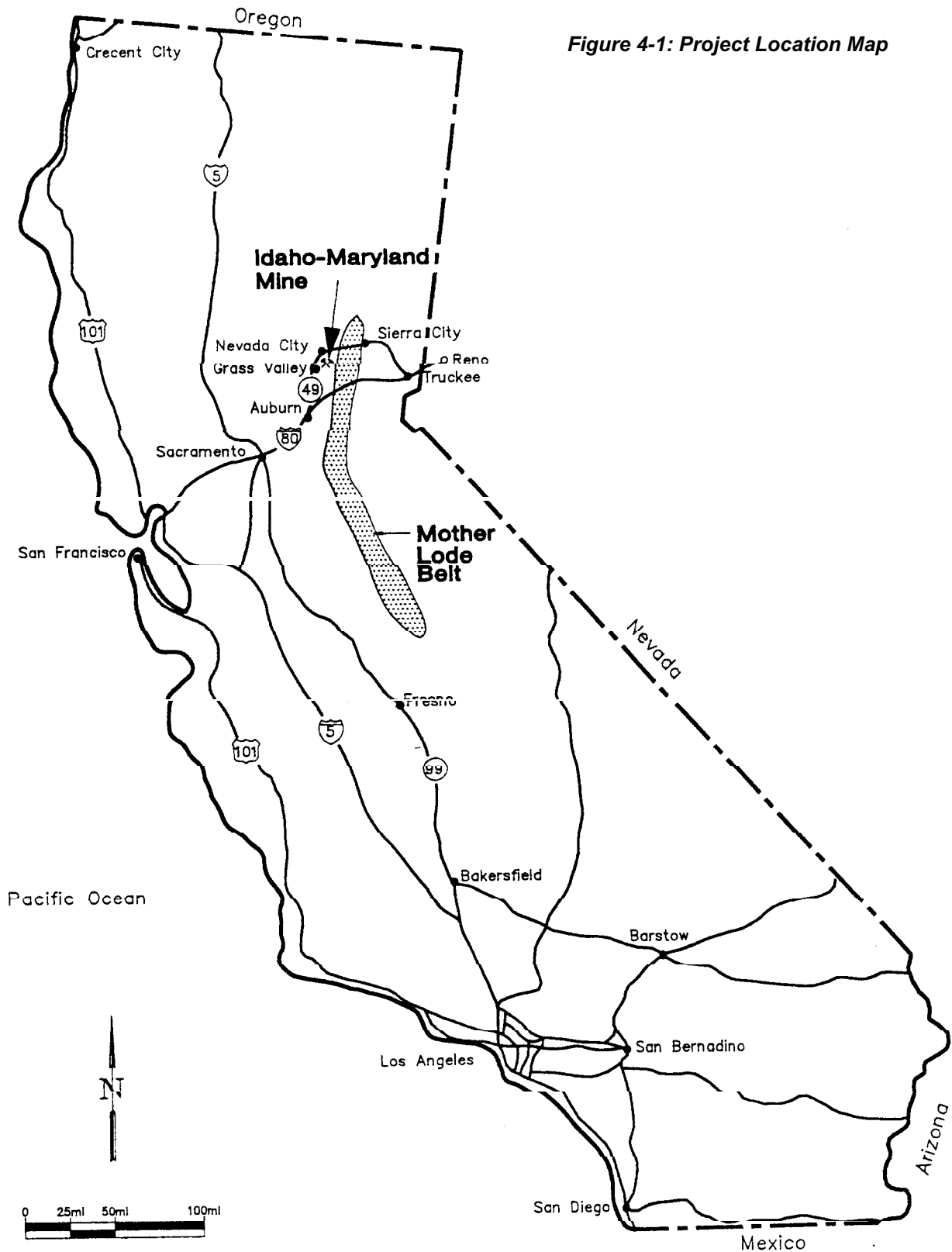
The mineral rights are severed from the surface rights at a variable depth from surface, with all mineral rights being contiguous below 200 ft (60 m) from surface.

The parcels and subparcels have been legally surveyed a number of times since the early 1900s. A complete legal survey is planned by Emgold as part of their permitting process. For more information on permitting, see Section 4.3.



# EMGOLD MINING CORPORATION

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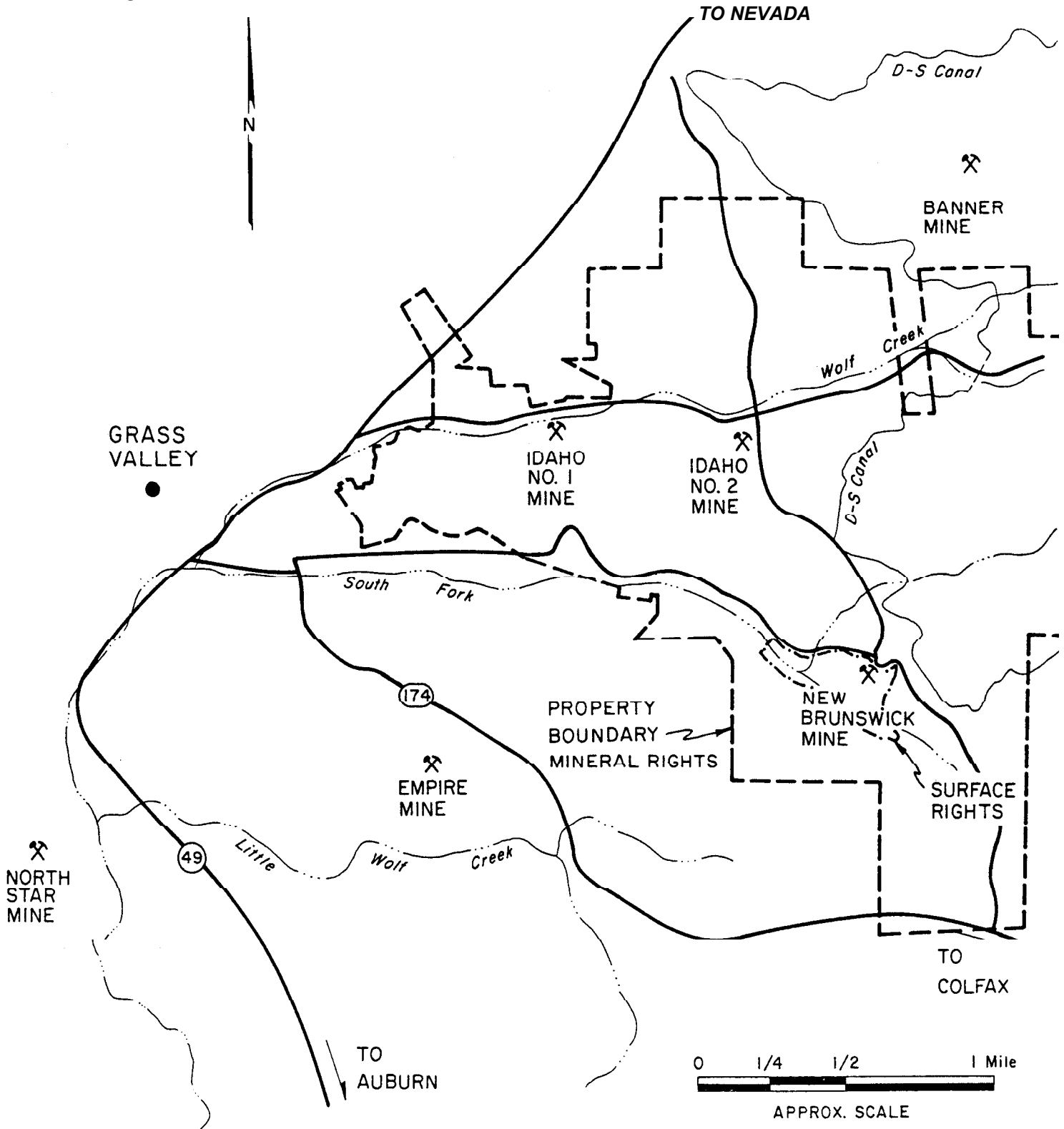




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Figure 4-2: Mine Location



[illegible]





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**Table 4-1: Summary Information from the Quit Claim Deed on Ten Parcels (from copy of original document in Appendix A)**

Source: Exhibit "A", Vol. 337, pp. 175-196 of the Official Records, Nevada County, California, as filed on June 12, 1963.

<b>Parcel No. 1:</b>	Pertains to all minerals, gas, oil and mineral deposits of every kind and nature below a depth of 200 ft (60 m) beneath the surface except where noted.
Reference No.:	QC 1.1 or Quit Claim, Parcel 1, subparcel 1
Name:	J.M. English Quartz Mine, Lot No. 54, SE1/4 Sec. 25, T 16 North, R 8 East, MDB&M
Reference No.:	QC 1.2 (Parcel 1, subparcel 2).
Name:	Lucky or Agnes Quartz Mine, Lot No. 129, Sec. 25 & 36, T 16 North, R 8 East, MDB&M
Reference No.:	QC 1.3 (Parcel 1, subparcel 3).
Name:	Union Hill Quartz Mine, Lot No. 59, Sec. 25 & 36, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.4 (Parcel 1, subparcel 4).
Name:	Centennial Quartz Lode Mining Claim, Lot No. 106, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.5 (Parcel 1, subparcel 5).
Name:	Halphene Quartz Lode Mining Claim, Lot No. 202, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.6 (Parcel 1, subparcel 6).
Name:	"Dorothy D" Lode Mining Claim, Survey No. 5628, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.7 (Parcel 1, subparcel 7).
Name:	Morning Dew Quartz Lode Mining Claim, Lot No. 130, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.8 (Parcel 1, subparcel 8).
Name:	Howard Hill Lode Mining Claim, survey No. 4613, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.9 (Parcel 1, subparcel 9).
Name:	(portion of) Hoxie Placer Mining Claim, Lot No. 6, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.10 (Parcel 1, subparcel 10).
Name:	Cambridge Quartz Mine, Lot No. 128, Sec. 36, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.11 (Parcel 1, subparcel 11).
Name:	Gold Blossom Quartz Mine, Lot No. 3697, Sec. 36, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.12 (Parcel 1, subparcel 12).
Name:	(name not listed), Lots No. 1, 2, 3, 4 and 5. NE1/4 of Sec. 36, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.13 (Parcel 1, subparcel 13).
Name:	(name not listed), Fractional west half of NE1/4 of Sec. 36, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.14 (Parcel 1, subparcel 14).
Name:	(name not listed) NW1/4 of Sec. 31, T 16 N, R 9 E, MDB&M
Reference No.:	QC 1.15 (Parcel 1, subparcel 15).
Name:	(name not listed) SW1/4 of Sec. 31, T 16 N, R 9 E, MDB&M
Reference No.:	QC 1.16 (Parcel 1, subparcel 16).
Name:	Eureka Gold Mining Co.'s Claim, Lot No. 41, Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.17 (Parcel 1, subparcel 17).
Name:	Tracy Quartz Lode Mining Claim, Lot No. 193, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.18 (Parcel 1, subparcel 18).
Name:	Independence Quartz Lode Mining Claim, Lot No. 120, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.19 (Parcel 1, subparcel 19).
Name:	Alpha Quartz Lode Mining Claim, Lot No. 66, Sec. 25 & 26, T 16 N, R 8 E, MDB&M



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Reference No.:	QC 1.20 (Parcel 1, subparcel 20).
Name:	Black Hawk Extension Lode Mining Claim, Lot No. 4218 Sec. 25 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.21 (Parcel 1, subparcel 21).
Name:	A.B.C. Mine, Lot No. 167 and OK Mine, Lot No. 168, Sec. 25 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.22 (Parcel 1, subparcel 22).
Name:	Gamblers Gold and Silver Lode Mine, Survey No. 4217, Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.23 (Parcel 1, subparcel 23).
Name:	(name not listed) (a) S1/2 of SE1/4; (b) NW1/4 of SE1/4; (c) S1/2 of SW1/4 and (d) NW1/4 of SW1/4 All in Sec. 24, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.24 (Parcel 1, subparcel 24).
Name:	(name not listed) (a) N1/2 of NE1/4; (b) NE1/4 of NW1/4; (c) Lot 1 of NW1/4 of NW1/4 Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.25 (Parcel 1, subparcel 25).
Name:	Kentucky Quartz Mine, Lot No. 133, Sec. 25 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.26 (Parcel 1, subparcel 26).
Name:	Idaho No. 1, Idaho No. 2, Idaho No. 3, Idaho No. 5, Idaho No. 6, Idaho No. 7, Idaho No. 11, Idaho No. 12, Maryland No. 22, Maryland No. 23, Maryland No. 24, Maryland Fraction, Maryland Extension Fraction, Gold Point Fraction and Gold Point Extension Lode Mining Claims, Survey No. 5514, Sec. 25 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.27 (Parcel 1, subparcel 27).
Name:	(name not listed) (a) SW1/4 of NE1/4, (b) SE1/4 of NE1/4, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.28 (Parcel 1, subparcel 28).
Name:	Baby Lode Claim and Pinafore Lode Claim, Survey No. 4216, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.29 (Parcel 1, subparcel 29).
Name:	Maryland Consolidated Quartz Mining Claim comprising Maryland Lode, Lot No. 144, Maryland Extension Location Lode, Lot No. 145 and Maryland Extension Mill Site Claim, Lot No. 146, Survey No. 2535, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.30 (Parcel 1, subparcel 30).
Name:	Maryland Extension Quartz Mine Lode, Survey 3679, NE1/4 of SE1/4 of Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.31 (Parcel 1, subparcel 31).
Name:	Gold Point Consolidated Gold and Silver Mining Company's Lode Mining Claim, Lot No. 107, survey No. 1892, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.32 (Parcel 1, subparcel 32).
Name:	Idaho Mill Site Claim, Lot No. 138, Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.33 (Parcel 1, subparcel 33).
Name:	East Eureka Lode Mining Claim, survey No. 5515, Sec. 25 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.34 (Parcel 1, subparcel 34).
Name:	Idaho Mining Company's Claim, Lot No. 38, Survey No. 24, Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.35 (Parcel 1, subparcel 35).
Name:	(name not listed), Lot No. 13, Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.36 (Parcel 1, subparcel 36).
Name:	Grant Quartz Mine Claim, Lot No. 62, Survey No. 634, Sec. 25 & 26, T 16 N, R 8 E, MDB&M

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Reference No.:	QC 1.37 (Parcel 1, subparcel 37).
Name:	(portion of) Hoxie Placer Mining Claim, Lot No. 5, SE1/4 of Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.38 (Parcel 1, subparcel 38).
Name:	Roannaise Lode, Lot No. 116, Sec. 23 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.39 (Parcel 1, subparcel 39).
Name:	Schofield Lode, Lot No. 37, Sec. 25 & 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.40 (Parcel 1, subparcel 40).
Name:	Morehouse Quartz Mine, Lot No. 53, Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.41 (Parcel 1, subparcel 41).
Name:	"Lot Numbered Three" in NE1/4 and "Lot Numbered Seventeen" in NW1/4 of Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.42 (Parcel 1, subparcel 42).
Name:	Lots Numbered 5 & 7 in NE1/4 of Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.43 (Parcel 1, subparcel 43).
Name:	(name not listed), Lot No. 9 of NE1/4 of SW1/4 and portion of NW1/4 of SE1/4 of Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.44 (Parcel 1, subparcel 44).
Name:	strip of land 40 ft on either side of centerline of Nevada County Narrow Gauge Railway, NE1/4 of SW1/4 of Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.45 (Parcel 1, subparcel 45).
Name:	(name not listed), area is in NW1/4 of Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.46 (Parcel 1, subparcel 46).
Name:	(name not listed), Lot 3, NW1/4 of Sec. 25, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.47 (Parcel 1, subparcel 47).
Name:	(name not listed), SE1/4 of SE1/4 of NE1/4 of Sec. 26, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.48 (Parcel 1, subparcel 48).
Name:	(name not listed), Lot 1, portions of NE1/4 of NE1/4 and N1/2 of NE1/4 of Sec. 30, T 16 N, R 9 E, MDB&M
Reference No.:	QC 1.49 (Parcel 1, subparcel 49).
Name:	(name not listed), Lot 4 in SW1/4 and SE1/4 of SW1/4 of Sec. 19, T 16 N, R 9 E, MDB&M
Reference No.:	QC 1.50 (Parcel 1, subparcel 50).
Name:	(name not listed), Lot 2 of NW1/4 and SE1/4 of NW1/4; Lots 3 & 4 in SW1/4, NE1/4 of SW1/4 and W1/2 of SE1/4 of SW1/4, N1/2 of SE1/4 and S1/2 of NE1/4, all in Sec. 30, T 16 N, R 9 E, MDB&M
Reference No.:	QC 1.51 (Parcel 1, subparcel 51).
Name:	Reservoir Site, area of SW corner of Sec. 30, T 16 N, R 9 E, MDB&M
Reference No.:	QC 1.52 (Parcel 1, subparcel 52).
Name:	portion of Biggs Placer, Lot No. 46, Survey No. 283, Sec. 36, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.53 (Parcel 1, subparcel 53).
Name:	Champion Lode Mining Claim, Survey No. 4826, in Sec. 1, T 15 N, R 8 E, and Sec. 35, T 16 N, R 8 E, MDB&M
Reference No.:	QC 1.54 (Parcel 1, subparcel 54).
Name:	Josephine Lode Mining Claim, Survey No. 4638, in Sec. 1, T 15 N, R 8 E, and Sec. 35, T 16 N, R 8 E, MDB&M

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Reference No.:	QC 1.55 (Parcel 1, subparcel 55).
Name:	Christopher Columbus Consolidated Quartz Mining Claim, An undivided 3/10 <sup>th</sup> interest, Lots 224 & 225, Survey No. 3399, Sec. 25 & 26, T 16 N, R 8 E, MDB&M
<b>Parcel No. 2:</b>	Lots 2, 4A and 4B, Block 9, Townsite of East Grass Valley; mineral rights below 100 ft except Lot 4B, Block 9 which has mineral rights below 35 ft from surface.
<b>Parcel No. 3:</b>	Portion of NE1/4 of SW1/4 of Sec. 26, T 16 N, R 8 E, MDB&M; mineral rights below 100 ft from surface.
<b>Parcel No. 4:</b>	W1/2 of SW1/4 of SE1/4 of Sec. 30, T 16 N, R 9 E, MDB&M; mineral rights below 75 ft from surface.
<b>Parcel No. 5:</b>	S1/2 of SW1/4 of Sec. 29, and SE1/4 of SE1/4 of Sec. 30, T 16 N, R 9 E, MDB&M; mineral rights below 75 ft from surface.
<b>Parcel No. 6:</b>	E1/2 of NW1/4 of NE1/4 and E1/2 of N1/2 of SW1/4 of NE1/4 of Sec. 31, T 16 N, R 9 E, MDB&M; mineral rights below 75 ft from surface.
<b>Parcel No. 7:</b>	N1/2 of Lots 7 & 8 and Lots 9 & 10 in Sec. 6, T 15 N, R 9 E, and E1/2 of SE1/4 of Sec. 36, T 16 N, R 8 E, MDB&M; mineral, gas and oil rights below 100 ft from surface.
<b>Parcel No. 8:</b>	Portion of Lot 46 on Survey 283 (Biggs Placer Mining Claim) on portions of Sec. 35 & 36, T 16 N, R 8 E, and on Sec. 1, T 15 N, R 8 E, MDB&M; an undivided 3/5 <sup>th</sup> interest in mineral rights below 100 ft from surface.
<b>Parcel No. 9:</b>	NW1/4 of SW1/4 of Sec. 36, and NE1/4 of SE1/4 of Sec. 35, T 16 N, R 8 E, MDB&M; an undivided 3/10 <sup>th</sup> interest in all gold and precious metal rights below 100 ft from surface.
<b>Parcel No. 10:</b>	SE1/4 of SE1/4 and SW1/4 of SE1/4 of Sec. 36, T 16 N, R 8 E, MDB&M; an undivided 9/35 <sup>th</sup> interest in all gold and precious metal rights below 100 ft from surface.

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Note: Variations in the crown pillar for the subparcels of Parcel 1 are not included in the table. They are as follows: 1, 6, 9, 18, 37: surface rights to 75 ft • 1, 6, 9: surface rights to 75 ft • 1, 6, 9, 14, 15, 18, portion of 26: to 75 ft • 1, 6, 9, 12: surface rights to 75 ft • 3, 5, 12: surface rights to 75 ft • 14: not to interfere with agricultural use • 14: surface rights to 75 ft • 15: no mineral rights to Nevada Irrigation Dist • 15, 50: surface rights to 75 ft • 15: surface rights to 75 ft • 15: surface rights to 75 ft • 19, 23, 24, 25: surface rights to 75 ft • 16, 38, 41, 42 (Lot 5): surface rights to 75 ft • 17, 21, part 26, 28: mineral rights to surface • 20, 21, 22, part 26, 39, 42, 43, 44, 46, 47: surface right to 100 ft but with right to mine mineral without disturbing the surface • 22, part 26: mineral rights to surface • 23: surface rights to 75 ft • 23: surface rights to 75 ft without disturbing the surface • 23: surface rights to 75 ft • 24, 25: surface rights to 75 ft • part 26: mineral rights to surface • 33: surface rights to 75 ft • 38: surface rights to 75 ft • 38: surface rights to 75 ft • 40, 42 (Lot 5): mineral rights to surface • 41: mineral rights to surface • 41: change of surface owner • 42: surface rights to 75 ft • 43: mineral rights to surface • 43: change of surface owner • 44: surface rights to 50 ft but with right to mine without disturbing surface • 48: surface rights to 75 ft but with the right to explore and mine with the surface owner's permission • 50: surface rights to 75 ft but with the right to explore and mine with the surface owner's permission • 50: defines a 385.316 acre block • 9, 18, 37: surface rights to 75 ft but with the right to explore and mine with the surface owner's permission • 55: surface rights to 50 ft for (a); 75 ft for (b) and 75 ft for (c) • 55: that portion of Christopher Columbus Treasury Lode Claim No. 225 that may overlap Alpha Quartz Lode Mining Claim, Lot No. 66 • 1, 2, 3, 4, 5, 10, 12, 14, 26: mineral rights to surface.

Note 2: For parcels and subparcels where no name is listed, these are generally patented lands other than mining claims, and no mining claim name has ever been given to them.



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The revised 2002 Agreement between Emgold and the mineral rights holders (BET Group) includes a mining lease and option to purchase the property, which is defined by the following:

- approximately 2,750 acres of minerals and mineral rights (with no surface rights)
- approximately 37 acres of land (the "Brunswick Property") with mineral rights located around the New Brunswick Shaft
- an additional parcel of 56 acres of land (the "BET Property") located west of the Brunswick Property.

The term of the lease agreement is five years commencing on June 1, 2002.

This revised agreement includes a settlement of past delinquencies owing to the BET Group involving rent, royalty, option payments, and property taxes of US\$139,000, payable in three installments as follows:

- US\$16,000 on May 31, 2002 (paid)
- US\$28,000 on August 1, 2002 (paid)
- US\$95,000 on December 1, 2002 (payment pending).

During the term of the lease agreement, any production from the property will be subject to a 3% Net Smelter Royalty (NSR).

Emgold has the option to purchase the property for US\$4.35 million during the five-year term of the lease. Under the terms of the agreement, Emgold has agreed to pay the BET Group the following non-refundable amounts:

- US\$9,000 on each of the following dates, May 31, 2002, August 1, 2002 and December 1, 2002
- US\$19,500 quarterly on the first business day of, February, May, August, and November 2003
- US\$25,500 quarterly on the first business day of each of the same months for the balance of the lease agreement through 2007.

The cost of the option to purchase will increase by 3% each year to the time of purchase. Emgold has the right to purchase the property outright at any time by pre-paying the principal and in any amount without premium or penalty to the BET Group.



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Emgold is also responsible for paying all appropriate taxes on the property. The revised agreement has received regulatory approval from the TSX Venture Exchange.

### 4.3 Permits & Agreements

#### 4.3.1 Permit Background

In the mid-1990s, Emperor Gold (U.S.) Corp (Emperor Gold) applied to the Nevada County Planning Department for a “use permit” to dewater, explore, and sample the workings of the Idaho-Maryland Mine. On January 25, 1996 the Nevada County Planning Department certified the *Environmental Impact Report* (EIR), prepared in accordance with the *California Environmental Quality Act* (see Appendix B), and issued a conditional use permit. In accordance with the permit, the project was to commence before January 25, 1998. One extension was sought and granted by the Nevada County Planning Department, requiring project commencement on or before January 25, 2003.

To support the dewatering efforts, Emperor Gold applied for a National Pollution Elimination Discharge System (NPDES) permit with the California Regional Water Quality Control Board, Central Valley Region (CVRWQCB). On May 3, 1996 NPDES Permit No. CA 0083933 was issued as part of the CVRWQCB Waste Discharge Requirements Order No. 96-098 (Order) to allow Emperor Gold to dewater the Idaho-Maryland Mine. The order was issued for a period of five years and expired on May 3, 2001.

#### 4.3.2 Permit Requirements

Two aspects of the project will need to be addressed in the permitting process: 1) requirements for exploring and confirming the mineral resources, and 2) requirements for developing the mineral resources. The exploratory phase may be exempt from certain regulatory requirements that are required for full-scale development of the site; however, because the exploratory work is part of a larger scale project, the Lead Agency may elect to combine both project phases into one permitting process.

##### ***Drilling Permit***

The scope of the exploratory work may include drilling exploratory boreholes from up to six sites. Per conversations on October 10, 2002 with representatives of Nevada County (Todd Herman and Randy Wilson), the Idaho-Maryland Mine is zoned and





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designated for "Business Park" development. Unlike a similar designation by the City, the County's designation permits subsurface mining but does not allow surface mining. Therefore, a zoning and general plan amendment may be required to allow surface exploratory mining to proceed. Such action would require applying for a "use" permit.

If the extent of the exploratory work involves surface drilling at five locations or less, the work could be undertaken with the landowners' consent using one permit. However, depending on the locations of the boreholes, there may be issues associated with noise and the disturbance of private water wells that would require review under CEQA. That CEQA review might involve the preparation of an Initial Study and Negative Declaration (IS/ND), and take between three to six months to complete.

According to County representatives, if the surface area to be disturbed is less than 1 acre and involves the removal of less than 1,000 yd<sup>3</sup> of material, a reclamation plan would not be required under the SMARA (considered to be a CEQA action in its own right), and this work may proceed with a grading permit, which would only take up to six weeks to obtain. However, since a "use" permit would be required for surface mining, a CEQA review would be initiated in accordance with the County's Grading Plan requirements, and this permit may take between three to six months to obtain.

### ***Conditional Use Permit***

Emgold is in the process of modifying its plans to reopen the Idaho-Maryland Mine. Accordingly, new permit applications and CEQA documents will need to be prepared, although some information prepared for earlier permit applications and the CEQA process may also be used.

The portion of the mine claim to be developed is located within an area that is zoned for Business Park land use and is to be annexed to the City by 2005. Filing a new development or "use" permit application with the City's Community Development Department rather than the County, as was done originally, would be prudent. In doing so, the City would become the Lead Agency in the permit and CEQA process, and the County would be the Responsible Agency. As described more fully in Appendix B, before a permit may be approved, the associated environmental issues must be addressed. This would involve, at a minimum, the following:

- preparation of an EIR in accordance with CEQA
- preparation of a Reclamation Plan in accordance with the *Surface Mining and Reclamation Act* (SMARA)



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- application for a Discharge Permit for mine dewatering from the CVRWQCB in accordance with the federal *Clean Water Act* (CWA)
- application for an NPDES permit from the CVRWQCB in accordance with the CWA
- application for a permit to construct or Title V permit from the North Sierra Air Quality Management District (NSAQMD) in accordance with the *Clean Air Act* (CAA).

The three applications listed above are generally dependent on information developed as part of the CEQA process, although each may have certain data (e.g., runoff coefficients for the Storm Water Pollution Prevention Plan, SWPPP) that need to be developed separately. Approval of such permits is often dependent on the completion of the CEQA process and will not be separately addressed at this time.

The proposed development must be consistent with the City's General Plan and Zoning Ordinances. To allow for mining, the lands on which the claims are located must be zoned and designated as "Industrial." The following administrative procedures need to be completed before the mine claims can be developed for mineral extraction:

- General Plan Amendment
- Zoning Designation Amendment
- Local Agency Formation Commission (LAFCo) Process to complete the annexation of County lands into the City.

### 4.3.3 Permit Schedule Summary

The best-case schedule scenario for obtaining permits to reopen the Idaho-Maryland Mine would involve a time frame of up to 15 months (comprising the statutory one year time frame and an allowable three month extension) for the CEQA process, and three to nine months for the LAFCo process. Together, these processes indicate a schedule of between 15 and 24 months to obtain meet the environmental and permit requirements.

It may be possible to simultaneously initiate the permitting process for exploratory work and for full development. However, the exploratory work would need to be designed to be exempt from the requirements of a CEQA review (for land use issues) and SMARA. Such an alternative may allow the mineral resources to be delineated while work is in progress to permit the full-scale mining operations within six months of project initiation.



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The key to the success of this strategy is working closely with the County and City as they may be the Lead Agency for the exploratory and full mineral resource developments, respectively, and are stakeholders in both CEQA processes. As cooperating agencies in either the IS/ND or EIR CEQA process, they have the authority to run the permit processes simultaneously or sequentially. The latter scenario may add between three to six months to the time frames for the EIR process.

Because of the importance of developing a coordinated, collaborative, and informed CEQA process with project stakeholders in the industry, as well as in government and public arenas, Emgold will need to develop an outreach strategy to encourage public support and feedback on draft project and operational mine plans. Such a program may take between three to six months to plan and complete, so that a development or "use" permit application may be submitted and determined by the Lead Agency to be complete within 30 days, triggering the CEQA process.



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### 5.0 ACCESSIBILITY, CLIMATE & PHISIOGRAPHY

The Idaho-Maryland project is located in western Nevada County, east of the city of Grass Valley and south of Nevada City. Grass Valley and Nevada City are Sierra Nevada foothill communities located approximately 20 miles (32 km) north of Auburn and approximately 55 miles (89 km) northeast of Sacramento. Highway 49 and Highway 20 connect the Grass Valley/Nevada City area regionally.

The 56-acre (23 ha) BET property site is located off the two-lane Idaho-Maryland Road, approximately 1.5 miles (2.4 km) east of downtown Grass Valley and 3.5 miles (5.6 km) south of Nevada City. The Brunswick property lies adjacent to East Bennett Road, a two-lane artery running 400 ft (120 m) to the north of the New Brunswick shaft. Brunswick Road, a major two-lane artery connecting Grass Valley with State Highway 174, runs northwest/southeast approximately 550 ft (170 m) east of the shaft (see Figure 5-1). Land surrounding the shaft is used for industrial and residential purposes. Within 1,000 ft (308 m) of the shaft, there are approximately five residences, the closest being 750 ft (230 m) to the southwest.

The project area is characterized by low rolling hills with elevations between 2,500 ft (770 m) and 2,900 ft (895 m) above mean sea level (ASML). Collar elevation of the New Brunswick shaft is 2,757.3 ft (840.6 m) ASML.

The primary vegetation in the area includes Madrone, Western Red Cedar, Douglas Fir, Bigleaf Maple, Black Oak, Manzanita, California Coffeeberry, Currant, and Honeysuckle. Vegetation in the wet meadow areas includes Bromegrass, Yellow foxtail, rye, beak rush, fescue, bulrush, rush, smooth brome, and Orchard grass.

The Grass Valley/Nevada City area enjoys a mild climate year round. The monthly average temperature and precipitation data is presented in Table 5-1 and Figures 5-2 and 5-3. Snow occurs only two to four times each winter, with accumulations of 2" to 12" per event and rarely remains for more than three or four days.

An electric transmission line belonging to the Pacific Gas and Electric Company traverses the South Fork valley.



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Figure 5-1: Grass Valley Map



Table 5-1: Grass Valley Climatology by Month (minimum period of 30 years)

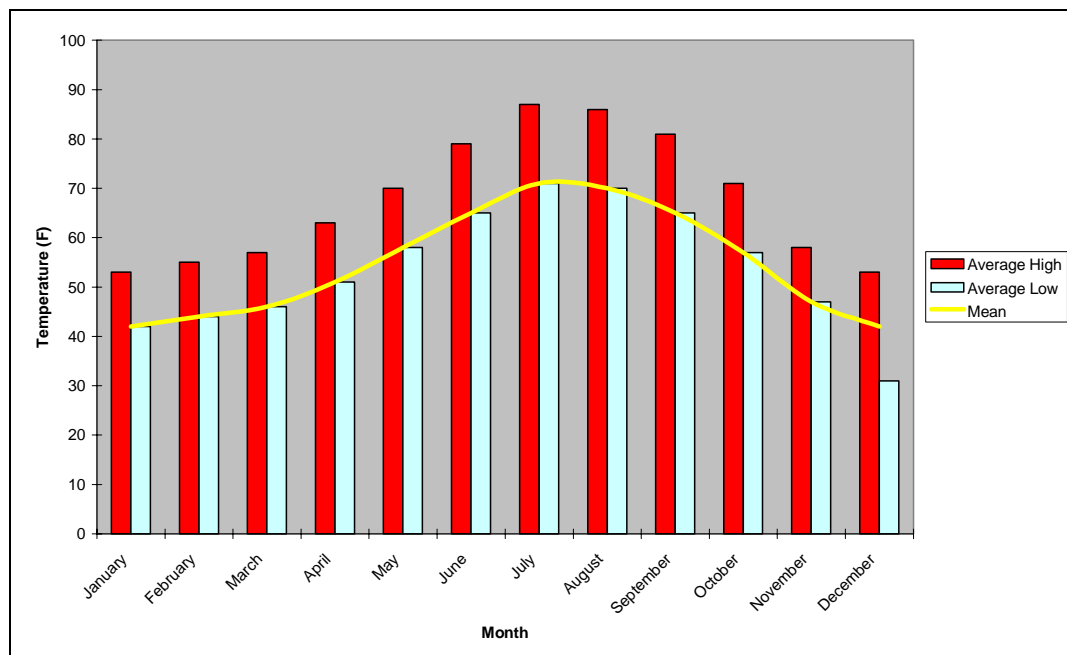
Month	Temperature			Average Precipitation (inches)	Cumulative Precipitation (inches)
	Average High (°F)	Average Low (°F)	Mean (°F)		
January	53	42	42	9.86	9.86
February	55	44	44	9.21	19.07
March	57	46	46	8.52	27.59
April	63	51	51	3.69	31.28
May	70	58	58	1.97	33.25
June	79	65	65	0.62	33.87
July	87	71	71	0.18	34.05
August	86	70	70	0.23	34.28
September	81	65	65	1.10	35.38
October	71	57	57	2.72	38.10
November	58	47	47	7.08	45.18
December	53	31	42	7.89	53.07
Average	68	54	55	4.42	
<b>Total</b>				<b>53.07</b>	



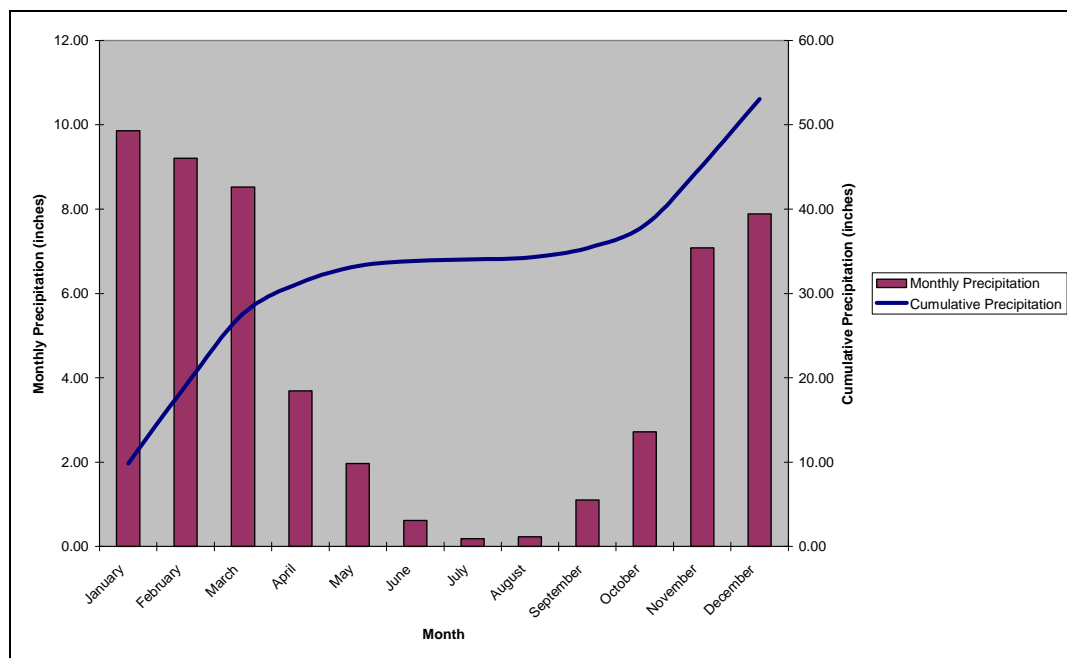
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**Figure 5-2: Grass Valley Temperature Ranges (minimum period of record: 30 years)**



**Figure 5-3: Grass Valley Precipitation by Month**





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### 6.0 HISTORY

The Grass Valley Mining district has been the most productive gold area in the State of California. The mines in the district were known in California as the “Northern Mines” and were not part of the Mother Lode gold belt. The first and second largest underground gold producing mines in the state, the Empire and Idaho-Maryland, are located about 2 miles (3 km) apart within the district.

The original claim on the Idaho-Maryland property was staked in 1851. High-grade gold mineralization was discovered in 1861 with the commencement of mining in 1863. All production during this time was from a single vein referred to as the Idaho Number 1 Vein. Subsequent production from 1863 to 1893 produced 1.0 million ounces of gold from 1.0 million tons of ore. Fire destroyed the Idaho mine hoist in 1894, which caused the lower mine workings to flood. The period from 1894 to 1914 saw intermittent gold production (approximately 75,000 ounces).

The claims around the deposit were consolidated in 1915 to form the Idaho-Maryland mine. Metals Exploration Company of New York acquired control of the property, dewatered the mine, deepened the Idaho shaft to 2,000 ft (610 m) and moved the Union Hill stamp mill to the Idaho shaft area. Full production, however, was never achieved (only 27,000 ounces gold recovered). Control over the property changed in 1926 when Errol MacBoyle and Edwin Oliver created holdings that included the Idaho-Maryland, Brunswick, and Morehouse mines. Production commenced the same year.

From 1926 to 1942 the Idaho Mine produced 650,000 ounces of gold from 1.1 million tons of ore. The Brunswick Mine restarted production in 1934 after deepening its shaft to 3,460 ft and constructing a 750 t/d mill. Production from 1934 to 1955 consisted of 810,000 ounces of gold from 3.6 million tons of ore.

The mines were closed in 1942, due to the enactment of the Federal War Production Boards Limitation Order L-208, and were reopened again in 1945. Production was hampered by depleted operating funds, rising costs, skilled labor shortages, and negligible exploration and underground development work. Gold mining ceased in 1954, being briefly replaced by government-subsidized tungsten production until 1957. Mining activity stopped altogether in 1957.

At the time of closure, the mine was owned by Idaho-Maryland Industries, Inc. In 1963 Idaho-Maryland Industries executed a Quit Claim Deed to William and Marian Ghidotti. Ownership of the mineral rights eventually passed to Mary Bouma, Erica Erickson, and William Toms (referred to as the BET Group) in 1983.





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James Askew Associates, Inc (JAA) and Vector Engineering were commissioned in 1991 to examine all historic data preserved from past mining. The work produced an assessment report on mineral resources and exploration potential, rehabilitating the former workings and permitting requirements.

In 1993 Emgold, through its U.S. subsidiary Emperor Gold (U.S.) Corp, obtained a lease and option to purchase all mineral rights acquired by way of the 1963 Quit Claim Deed from Idaho-Maryland Industries, Inc. Over the next 7 years, approximately US\$7 million was spent by Emgold to support work on the Idaho-Maryland property. The project was put on hold for approximately 1.5 years while the terms and conditions of the lease and option to purchase were renegotiated between Emgold and the BET Group. The revised Agreement includes a mining lease and option to purchase the Property, consisting of approximately 2,750 acres of minerals and mineral rights (with no surface rights), approximately 37 acres of land (referred to as the "Brunswick Property") with mineral rights located around the New Brunswick Shaft, and an additional parcel of 56 acres (referred to as the "BET Property") located west of the Brunswick Property. The term of the lease agreement is five years commencing on June 1, 2002.



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### 7.0 GEOLOGICAL SETTING

#### 7.1 Regional Geology

The Idaho-Maryland Mine and the Grass Valley Mining District are situated in the northern portion of the Sierra Nevada Foothills Gold Belt. This belt averages 50 miles (80 km) in width, and extends for 320 miles (520 km) in a north-northwest orientation along the western slope of the Sierra Nevada range (see Figure 7-1). The extent of the Sierra Nevada Foothills Gold Belt coincides closely with the outcrop area of the Sierra Nevada Foothills Metamorphic Belt.

The Sierra Nevada Foothills Metamorphic Belt comprises a complex collage of lithologic units formed as a result of northward lithospheric plate subduction and transpression at a collisional plate boundary during the late Jurassic to early Cretaceous Nevadan Orogeny (see Figure 7-2). The basement rocks of the belt are submarine meta-volcanics, meta-sediments, and oceanic crustal rocks of Ordovician to Jurassic age. The north-northwest structural grain is defined by a series of sub-parallel, right-lateral wrench faults that represent deep-seated suture zones. These structural breaks separate individual accreted terranes. Discontinuous belts of alpine-type ultramafic intrusions (serpentinites), and a serpentinite-matrix tectonic mélange containing deformed slabs of Jurassic ophiolitic, volcanic, and sedimentary rocks, both mark the trace of the deep-seated structural breaks that border individual lithotectonic terranes. Subduction-related, late Jurassic to Cretaceous composite batholiths and plutons of dominantly granodioritic composition subsequently intruded the collage of basement rocks.

The basement rocks of the Sierra Nevada Foothills Metamorphic Belt are divisible into three discrete north-northwest-trending belts separated by first-order, right-lateral wrench faults of great linear extent. Mesothermal lode gold mineralization occurs in all three belts. The majority of gold production has been from along the boundaries and within the Central Metamorphic Belt.

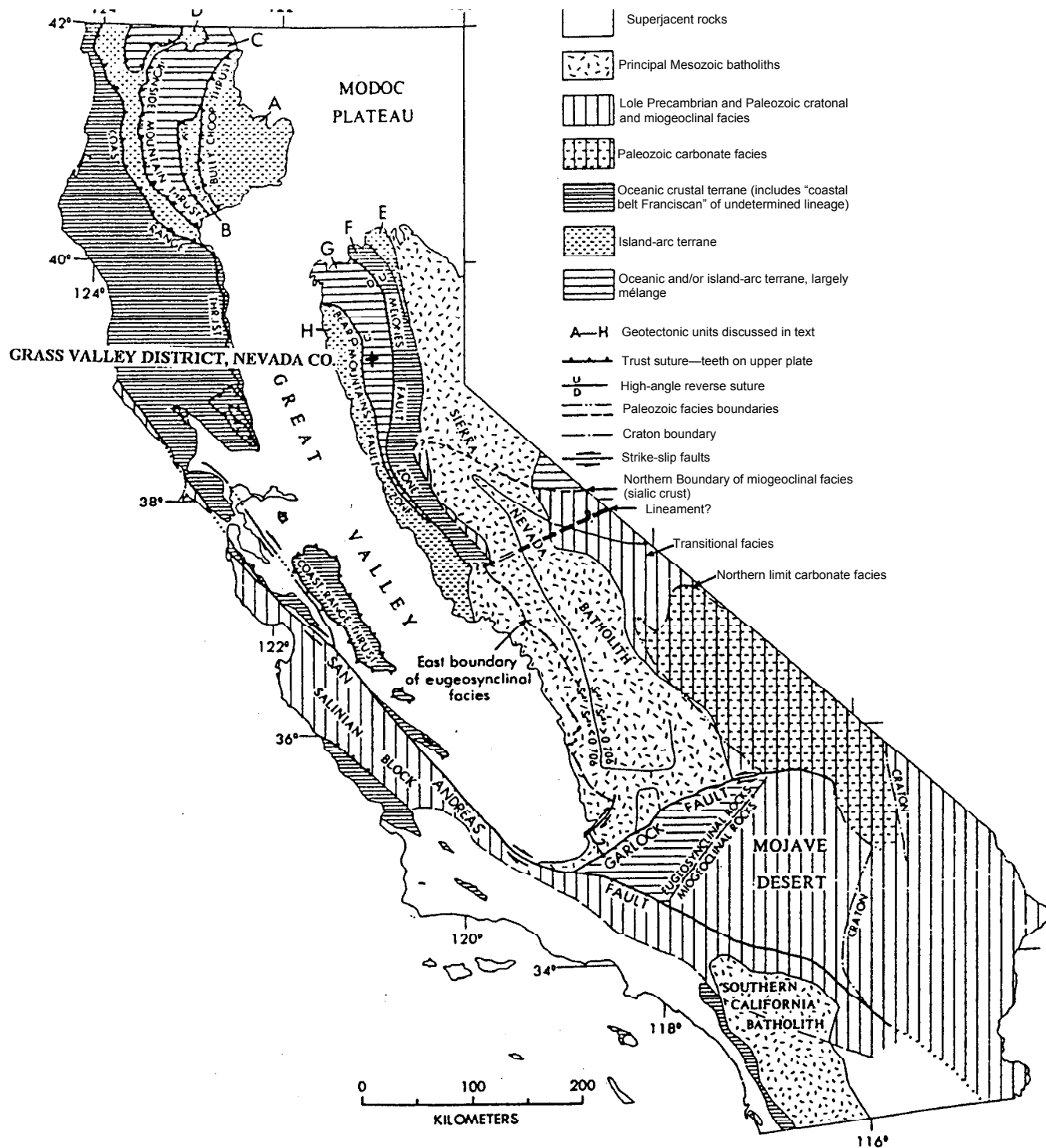
The Grass Valley Mining District within the Central Metamorphic Belt is laced by a braided system of first-order, right-lateral wrench faults that parallel the north-northwest regional structural grain. These wrench faults can be identified by the corridors of high strain and the discontinuous, linear bodies of ultramafic rock that intruded cold, upward along the deep-seated breaks. Individual wrench faults can be traced for up to 100 miles (160 km) in some cases, and they generally separate individual accreted terranes.



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**Figure 7-1: Regional Geology**

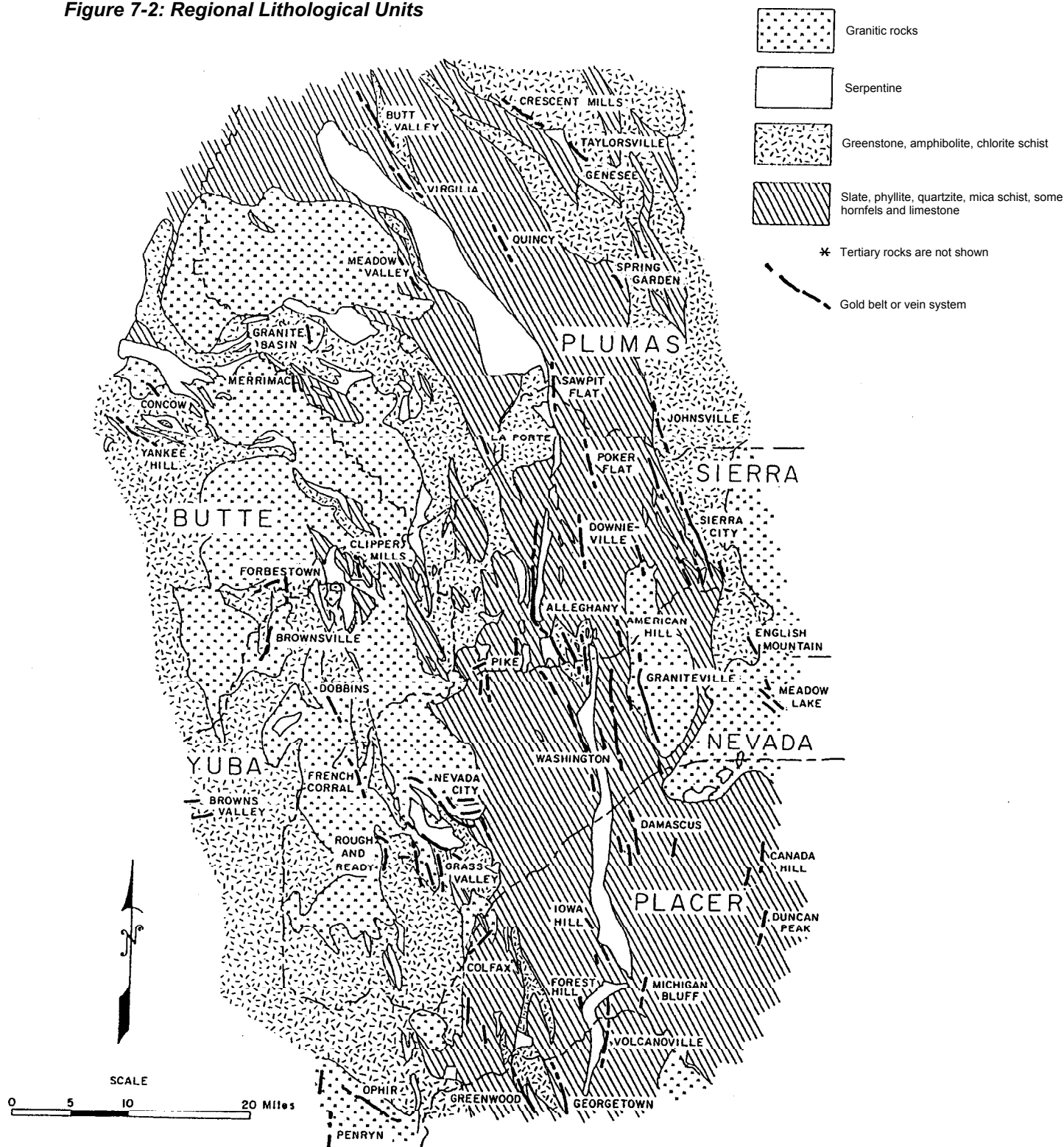




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Figure 7-2: Regional Lithological Units





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Individual accreted terranes within the Central Belt are of diverse origin and composition. The terranes are comprised of thick Triassic to Jurassic submarine meta-volcanic and meta-sedimentary accumulations deposited upon oceanic crust. The basement rocks were subsequently intruded by granodioritic to dioritic plutons that are satellitic to the main Sierra Nevada batholith. The individual terranes vary both in their degree of deformation and metamorphic grade. The regional metamorphic grade of individual terranes ranges from lower greenschist facies, to high-pressure, low-temperature blueschist facies. The plutonic intrusions show little or no evidence of regional metamorphism or deformation.

In the Grass Valley area, the Central Belt is an 8 mile (13 km) wide north-trending assemblage hosting two discrete accreted terranes ranging from late Triassic to late Jurassic in age, intruded by two early Cretaceous plutons (Loyd et al, 1992; Saucedo et al, 1992). The Central Belt is bound on its west and east sides by regional-scale tectonic suture zones. The Wolf Creek Fault Zone bounds the western side of the Central Belt. The Wolf Creek Fault Zone ranges from 500 ft to 2,000 ft (150 m to 600 m) wide in the Grass Valley area and encloses tectonic mélange slabs of meta-sedimentary rock. The Gillis Hill Fault/Melones Fault bounds the eastern side of the Central Belt and can be traced for over 100 miles (160 km) southward where it hosts the famous Mother Lode Gold Belt.

Preliminary studies have demonstrated that the gold mineralizing event defining the Sierra Nevada Foothills Gold Belt appears to post-date peak regional metamorphism and intrusion of the Sierra Nevada batholith. The gold deposits are related to a poorly understood mid-Cretaceous deformation event that is isolated to the gold mineralized fault structures and overprints all previous deformations. The gold deposits of the Sierra Nevada Foothills Gold Belt are found in linear belts conspicuously associated with the network of deep-seated structures bounding and/or dissecting lithotectonic terranes.

### 7.1.1 Structural Setting

The Sierra Nevada Foothills Metamorphic Belt has a strong north-northwest-oriented structural grain. During the Jurassic Nevadan Orogeny, compression and horizontal shortening was directed east-northeast, imparting a strong structural grain to the region. The Nevadan Orogeny was a result of alternating periods of east-northeast lithospheric subduction of the Kula plate, and right-lateral, transcurrent-compressional strike-slip motion along transform faults in the North American plate. The unique geology along the western coast of North America is thought to be a product of this unusual oblique subduction (Schweickert, 1981). There is evidence to indicate the subduction zone locked up periodically, and transpressional fault movement along a



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great number of deep-seated faults was the strain-releasing mechanism between the two colliding lithospheric plates. It is this system of deep-seated faults that has localized the gold deposits of the Sierra Nevada Foothills.

A minimum of three deformation episodes are recognized in the mining districts of the Sierra Foothills. The first is related to the alternating oblique subduction and transpressional faulting during the Nevadan Orogeny that generated north-northwest-oriented isoclinal folding in the zones of high strain, and open-type folds in areas of lower strain. In the high-strain zones, a pervasive northwest-oriented axial planar cleavage was developed during that event. The second episode of deformation is related to the forceful intrusion of the composite Sierra Nevada batholith. The final episode is related to the gold mineralization events of the Sierra Nevada Foothills Gold Belt. This very limited third deformational event overprinted all high-strain zones, which are known to host gold deposits. Brittle-ductile reactivation of these faults generated north-oriented crenulation folds and crenulation cleavage. Vein quartz was deposited in this stage. This poorly understood third episode resulted in cataclasis, attenuation, boudinage, and dismemberment of earlier quartz veins. Development of heavy fault gouge, reverse faults, and compressional telescoping has affected some vein structures as well.

The gold deposits in the Sierra Nevada Foothills are concentrated along numerous north to northwest-trending corridors of high strain related to second-order fault structures. The second-order faults branch from the first-order regional breaks that border the individual accreted terranes. Dilational jogs and pronounced bends in first-order fault zones can be points where favorable second-order branch faults develop. Favorable second-order faults can also occur where rock competency contrasts develop pressure shadows adjacent to first-order faults. Many important gold deposits are located in third- and fourth-order faults, with poor mineralization occurring in the second-order structures. Dilational jogs, bends, and pressure shadows in or adjacent to second-order faults can yield favorable third- and fourth-order faults. At all scales, the corridors of high strain demonstrate a braided character, with high-strain zones encompassing lensoid or rhomboid domains of lesser strain.

## 7.2 Property Geology

The rocks underlying the Idaho-Maryland Mine property are divisible into five separate units ranging in age from late Paleozoic to late Cretaceous:

1. Late Paleozoic to Triassic meta-sediments of the Fiddle Creek Complex
2. Jurassic meta-volcanics and interflow sediments of the Lake Combie Complex





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3. Later Jurassic ophiolitic assemblage of the Spring Hill Tectonic Mélange
4. Discontinuous later Jurassic Tectonic Mélange of the Weimar Fault Zone
5. Early Cretaceous dioritic intrusives.

These are described in detail in Sections 7.2.1 to 7.2.5.

### 7.2.1 Fiddle Creek Complex

The Fiddle Creek Complex is a highly disrupted sedimentary and volcanic sequence that exhibits a higher degree of metamorphism than adjacent units. The Fiddle Creek Complex is comprised of a later Paleozoic to early Mesozoic submarine sedimentary prism atop highly deformed oceanic crustal rocks. The Fiddle Creek Complex outcrops east of the Weimar Fault as isolated windows of limited size eroded through the Peardale Nappe, in the lower plate of the Mount Olive Thrust Fault (Tuminas, 1983; Edelman et al, 1989; Loyd et al, 1990; Saucedo et al, 1992; and Payne, 2000). The isolated outcrops of this sequence on the Idaho-Maryland property are tentatively correlated with the late Triassic Clipper Gap Formation, the uppermost unit of the Fiddle Creek Complex. This unit is poorly studied and its age is uncertain.

Outcropping windows of Clipper Gap Formation immediately east of the Weimar Fault Zone are a highly disrupted assemblage of interbedded chert and argillite. The unit exhibits poorly developed stratification that has been tilted to near-vertical attitudes (Lindgren, 1896, p. 79). Locally, the chert-argillite sequence is interpreted to have been tectonically intermixed within a slate matrix to form a sediment-matrix tectonic mélange in a subduction complex (Tuminas, 1983). The Clipper Gap Formation is best exposed underground in the 8 Crosscut on the Brunswick 1100 level, east of the Weimar Fault. The chert-argillite sequence is folded into a synform striking 300°. Black carbonaceous argillites dominate the sequence with interbedded dark gray chert, and minor beds of calcareous muddy sandstone (Farmin, March 1939b, June 1940b). Hard chert interbedded with sandstone and calcareous mud layers were encountered east of the Weimar Fault in the 13 Crosscut on the Idaho 1000 level (Farmin, July 1937a).

### 7.2.2 Lake Combie Complex

The Jurassic Lake Combie Complex is a thick meta-volcanic sequence with minor interflow meta-sediments. The unit is a rootless, dismembered sequence emplaced as thrust nappes in the upper plate of the Mount Olive Thrust Fault. The Peardale Nappe was emplaced east of the Weimar Fault. It is a regional-scale structural feature.





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The upper plate of the Mount Olive Thrust Fault is mapped as the lower unit of the Lake Combie Complex. It is dominated by interbedded intermediate volcanic flows, flow breccias, and pyroclastic tuff breccias (Tuminas, 1983). The interflow sediments include carbonaceous slate, argillite, marl, and chert units. The interflow sedimentary units range from 3 to 330 ft (1 to 100 m) in thickness.

### 7.2.3 Spring Hill Tectonic Mélange

The late Jurassic Spring Hill Mélange comprises a chaotic assemblage of clasts dismembered from the Jurassic Lake Combie Complex and its underlying oceanic crustal basement. The Spring Hill Mélange was recently identified as a mappable lithotectonic unit in 1995 (Payne et al, 1997). It is a district-scale structure, which underlies a 4 mi<sup>2</sup> (10 km<sup>2</sup>) area and dominates the property geology. The mélange unit is 4,200 ft (1.3 km) wide, extends for 4 miles (6.4 km) in a 300° orientation, and crosscuts the regional structural grain. The mélange is localized within a district-scale boudinage neck. The Grass Valley Fault defines its southern margin. All of the significant gold production from the Idaho-Maryland Mine was localized within the matrix and tectonic slabs of this unit.

The Spring Hill Mélange consists of serpentinitized ultramafic rocks that contain a chaotic arrangement of tectonic clasts. The serpentinite matrix of the mélange is well foliated and highly deformed. Locally it is comprised of a talc schist or talc + chlorite schist assemblage. The tectonic clasts or fragments range from fist-size clasts to mega clasts up to 1.5 x 0.62 miles (2.4 x 1.0 km) in dimension. The clasts will be referred to as “slabs” when discussed individually in this report. The larger slabs have been named by the Emgold geologic staff. The tectonic clasts represent dismembered material from the walls of the intruded oceanic crustal sequence.

Individual tectonic slabs are monolithologic to heterolithologic in composition. The *Brunswick Slab* is the largest, bordering the Idaho Mine to the south, extending eastward for 1.5 miles (2,400 m), and encompassing the Brunswick and Union Hill Mine workings. The regional-scale Weimar Fault abruptly truncates the slab on its east end. The Brunswick Slab is a thick sequence of intermediate meta-volcanic flows, flow breccias, lesser tuffs, and minor interflow sedimentary units correlative with the Jurassic Lake Combie Complex. The interflow meta-sedimentary units include red to green cherts, black carbonaceous slates to wackes, and rare marl beds. The Brunswick Slab hosts the Brunswick and Dorsey Vein Sets, and provides important controls for the Idaho and Morehouse Vein Sets.

The *Maryland Slab* is elongated in a west-northwest orientation and outcrops in the Round Hole shaft area, directly east of the Brunswick Slab. The slab is predominantly



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well-layered gabbro, locally massive, and of probable ophiolitic affinity. The mafic mineral content and grain size is quite variable. Faults form the sides of the layered gabbro slab. The Maryland Vein Set is localized beneath the keel of the shallowly southeast-plunging slab.

The *Fulton Slab* does not outcrop and was discovered on the Idaho 2000 level. The bottom of the shaft was sunk into the northeast contact of the slab. It is oriented in a N45°W direction, and lies 200 ft (60 m) northwest beyond the western terminus (keel) of the Brunswick Slab. A horizontal core hole penetrated a 650 ft (200 m) thick sequence of carbonaceous black slate to wacke with minor interbeds of black to gray fragmental meta-volcanics. The Fulton and Morehouse Vein Sets are localized in, or adjacent to, the Fulton Slab.

The *Sawmill Slab* is a large body that exhibits complex internal geology. The exact boundaries of the Sawmill Slab have not been determined due to poor exposure. This slab is located at the South Idaho shaft and outcrops prominently near the sawmill on East Bennett Street and along the low ridge bordering the south side of the Idaho tailings pond. The slab is composed of melanocratic to leucocratic layered gabbro cut by a sheeted diabasic dike swarm. These classic, sheeted dike structures are similar to those observed in layer 3 of oceanic crust. Ophiolitic sheeted dike structures include abundant one-sided chilled dike margins where later dikes have intruded up through the center of the previous dikes.

The *Sealy Slab* is a relatively small monolithologic clast of sheeted diabasic dike complex. It is worthy of mention due to its excellent outcrop exposure in a cut bank. It is the type area for the Spring Hill Mélange unit. Evidence of its ophiolitic affinity and faulted contact with the mélange matrix are nicely exposed. The Sealy Slab is located 300 ft (90 m) southward from the East Eureka shaft collar. Other lithologies represented in numerous smaller slabs include serpentinized peridotite, and a leucocratic diorite phase containing acicular hornblende needles.

### 7.2.4 Tectonic Mélange – Weimar Fault Zone

The tectonic mélange of the Weimar Fault Zone is dominantly a highly deformed serpentinite matrix. Only one tectonic slab — the Green Slab — is recognized within the Weimar Fault Zone, a 330 ft (100 m) wide, intermediate meta-volcanic clast that was intersected in the 11 Crosscut on the Brunswick 1300 level. This slab does not outcrop, and is located due east from the New Brunswick Shaft.



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### 7.2.5 Dioritic Intrusions

Minor dioritic intrusions are scattered across the Idaho-Maryland property, many of which are too small to map. The largest dioritic intrusion is a 1,300 x 900 ft (350 x 275 m) mass underlying an isolated, ellipsoid-shaped hill in the far northern tip of the property, adjacent to the west of Brunswick Road. It intrudes the far northeastern portion of the Spring Hill Mélange unit. Another small, dark gray dioritic dike outcrops at Idaho-Maryland Road and extends southward onto the eastern edge of the Morehouse patented claim. It is fresh, unaltered, and undeformed. This dike is 13 ft (4 m) thick and contains abundant anhedral accessory pyrite

### 7.3 Property Structural Geology

The shape of the Idaho-Maryland ore deposit is controlled by the regional-scale Weimar Fault and the district-scale Spring Hill Tectonic Mélange Zone. The tectonic mélange units of both major structural elements were discussed previously in the stratigraphy portion of this report. The Weimar Fault is a right-lateral wrench fault that transects an accreted terrane along its 50-mile (80-km) course. The fault cuts the late Paleozoic to Triassic Fiddle Creek Complex and an overlying nappe of Jurassic Lake Combie Complex rocks. It is a second-order fault that is younger age than the first-order suture zones, which bound accreted terranes.

#### 7.3.1 Weimar Fault Zone (6-3 Fault)

The Weimar Fault truncates all structures of the Idaho-Maryland Mine and forms the blunt eastern termination of the wedge-shaped ore deposit. The fault likewise truncates the eastern end of the Spring Hill Mélange unit. The Weimar Fault strikes 330° to 350°, dipping 70° NE through the eastern side of the property. It is poorly exposed due to the gouge and highly comminuted nature of the rocks within the fault zone. The surface trace of the Weimar Fault, near the New Brunswick Shaft, was a gougey serpentinite with the consistency of modeling clay (Jack Clark, Mine Superintendent from 1954-56, pers. comm., 1995). Clark further states that the Weimar Fault intersects the New Brunswick vertical shaft just above the 580 level station. He reports that the fault did not create any instability in the shaft, but that the shaft walls belled-out at that location where the rock broke to fractures. Underground, the Weimar Fault was intersected in many crosscuts and core holes. In all cases, the fault zone displayed strong shearing and gouge development.



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### 7.3.2 Spring Hill Mélange

The Spring Hill Mélange unit (see Figure 7-3) is a dominant structural feature at the Idaho-Maryland Mine. A large portion of the mineral rights area is underlain by this unit. In the geological context of the Grass Valley Mining District, the Spring Hill Mélange and the Idaho-Maryland ore deposit cut the structural grain of the district at an obtuse angle. The Spring Hill Mélange unit is elongated in a 300° direction for 4 miles (6.4 km) and has an average width of 0.87 miles (1.4 km). It has a pervasive fabric plunging 20° SE at all scales. It is confined on its southern and northern boundaries by the Grass Valley and Olympia Faults, respectively. The matrix of the mélange is sheared serpentinite enclosing large exotic slabs of Jurassic Lake Combie Complex meta-volcanics and its underlying oceanic crust. The internal structural elements within the mélange control the locations of mineralization in the mine. Individual tectonic slabs have shown important controls localizing vein sets and the Idaho Deformation Corridor.

### 7.3.3 Idaho Deformation Corridor

The Idaho Deformation Corridor (Figures 7-3, 7-4 and 7-5) is a braided zone of high strain that extends along the entire length of the Idaho-Maryland ore deposit. The corridor averages 490 ft (150 m) in width and is traceable for 2.0 miles (3 km) along a 275° to 290° strike. The zone dips 60° to 70° south and extends to the deepest levels of the mine at 0.62 miles (1 km). The Brunswick Slab defines the southern boundary of the high-strain zone for nearly its entire length. The L Fault forms the northern boundary. In general, the zone exhibits a dominant normal vertical displacement with a much weaker component of right-lateral horizontal displacement.

The Idaho Deformation Corridor is comprised of both linear and non-linear fault members. Both fault members show strong deformational fabric, well-developed gouges, and host the large, high-grade oreshoots of the mine. The linear faults include, from south to north, the Idaho, 89, H, and L Faults. Non-linear link faults include the Idaho 2 Vein, Idaho 4 Vein, Eureka, and Hammill Link Faults. The link faults are sigmoidal and trend northeasterly, dipping 20° to 40° SE. The link faults developed at points of dislocation along the contact of the Brunswick Slab. Large tabular plates of the slab were sheared off and displaced upwards along the planes of the linear fault members.



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Figure 7-3: Property Structural Geology – Plan View

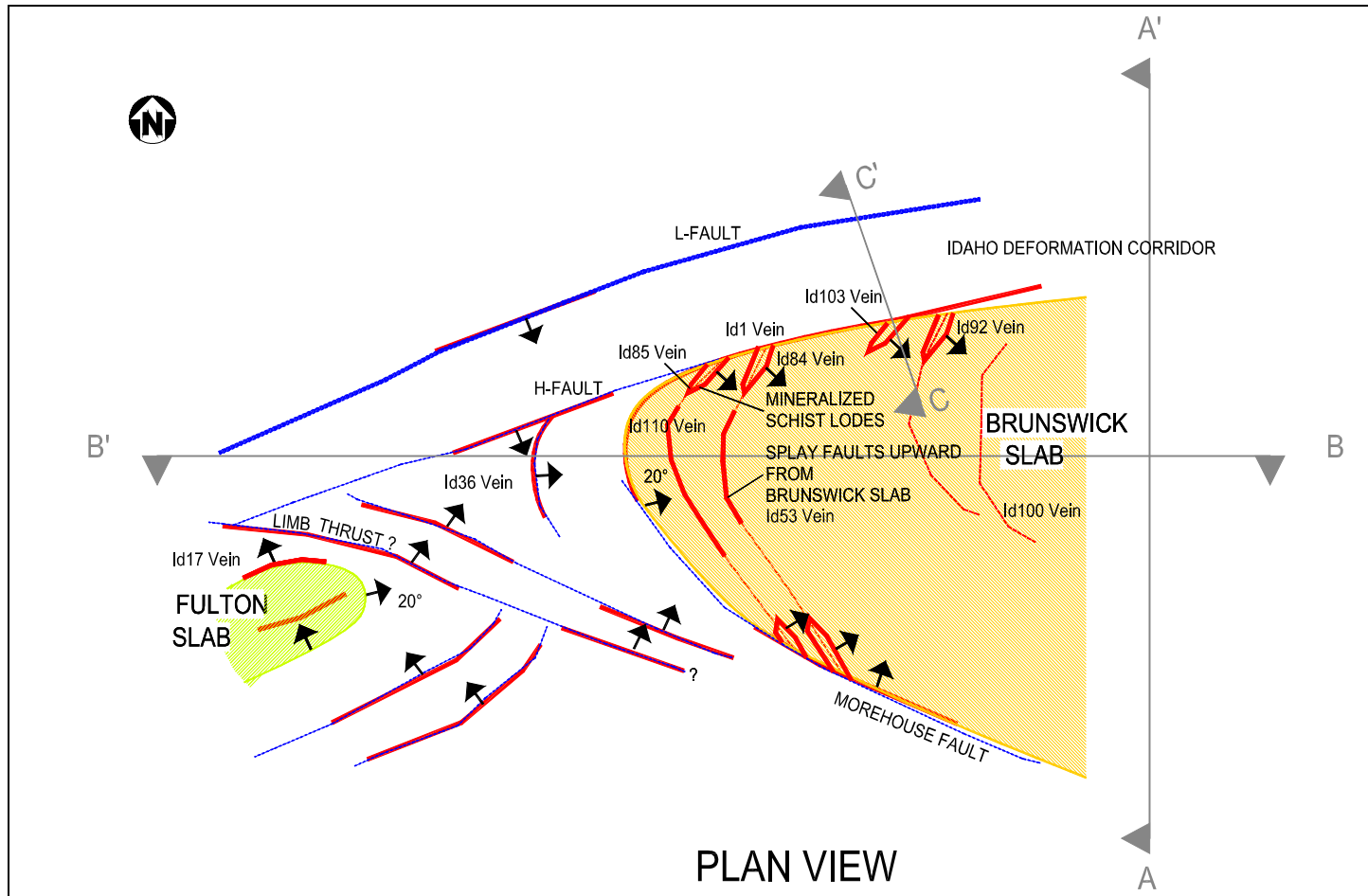
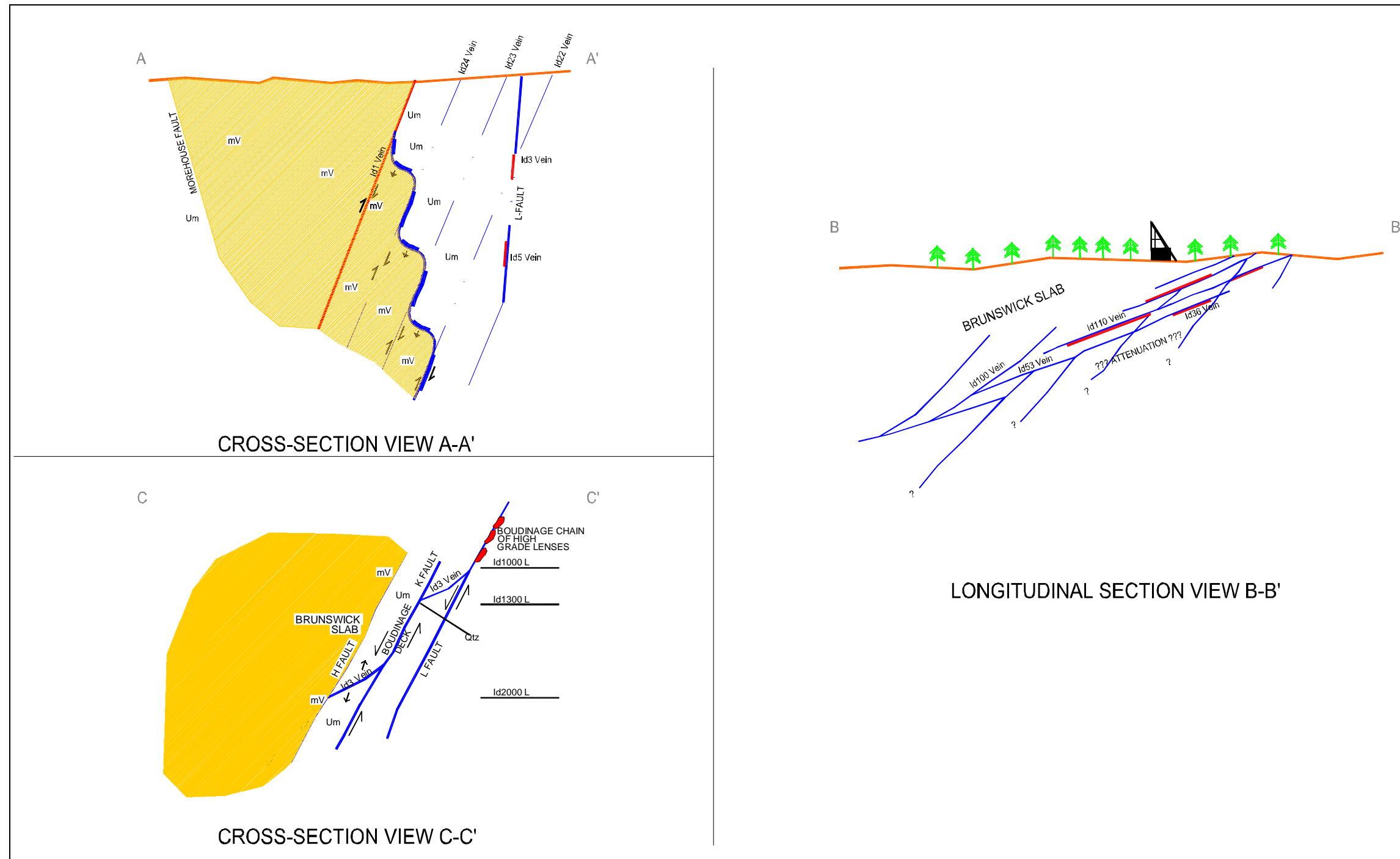




Figure 7-4: Property Structural Geology – Sections

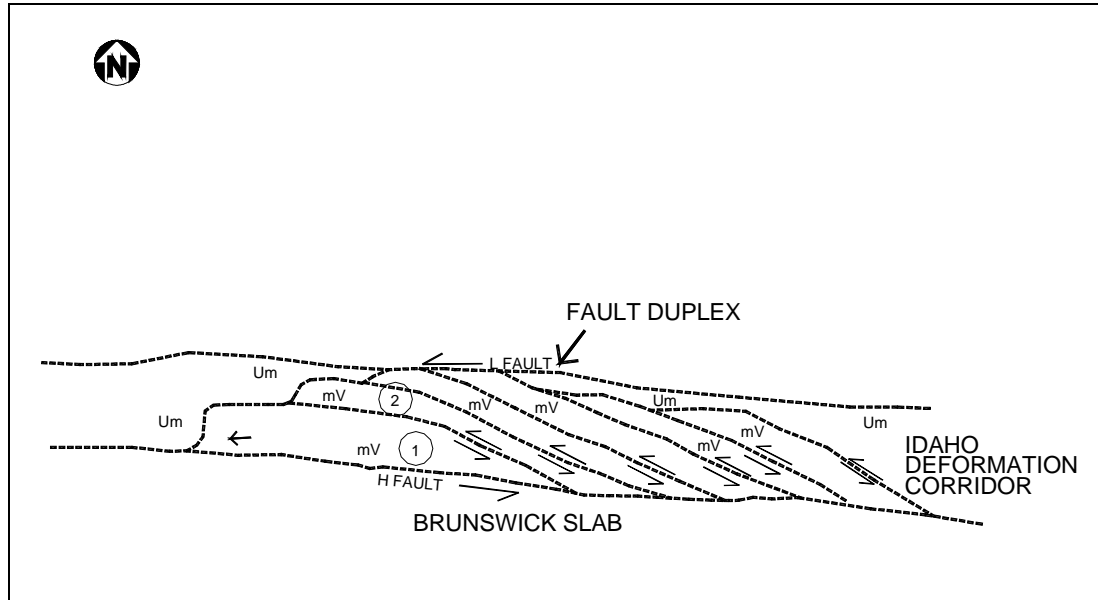




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Figure 7-5: Idaho Deformation Corridor



For example, at the Idaho 2000 level, the Idaho Fault follows the contact of the Brunswick Slab eastward from the area of the Idaho #1 Shaft to the area of the 30 Winze. It separates meta-volcanics of the Brunswick Tectonic Slab from serpentinite mélangé matrix. Near the 30 Winze, the 70° S dipping Idaho Fault crosses the contact of the Brunswick Slab, slicing into it at an acute angle. From that point eastward, the Idaho Fault has meta-volcanics of the Brunswick Slab along its hanging and footwalls. At this same location, the Idaho 2 Vein extends from its junction with the Idaho Fault northeastward in a sigmoidal path. The Idaho 2 Vein now defines the contact between the meta-volcanics and serpentinites, with serpentinite at its footwall. The Idaho 2 Vein converges with the H Fault. The H Fault then defines the contact between the meta-volcanic slab and the serpentinite mélangé matrix eastward toward the Weimar Fault.

In the above example, the linear fault members such as the Idaho and H Faults serve as the glide planes along which sheared plates of meta-volcanic rock slid upward. The link faults, such as the Idaho 2 Vein, are actually the preserved segments of the meta-volcanic/serpentinite contact on the individual sheared plates. The ramp-like link faults may extend along their course upward through the serpentinites beyond the extent of the sheared plates of meta-volcanic slab. The points of dislocation marked by link faults along the contact of the Brunswick Slab are an important locus for the development of individual vein sets. The Maryland Vein Set is a prime example. The entire arrangement of faults and sheared plates of the Brunswick Slab suggest a fault duplex coupled with attenuation and incipient boudinage development.





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### 7.3.4 Morehouse Fault

The Morehouse Fault (Figure 7-3) branches from the hanging wall of the Idaho Deformation Corridor and follows the footwall contact of the Brunswick Tectonic Slab in a great arc. The Morehouse Fault outcrops poorly and has received only minor development in the mine. Mine development at the keel of the Brunswick Slab on the Idaho 1500, 2000, and 2400 levels has suggested that dislocations may occur in a pattern along the bottom contact (keel) of the slab. This has been interpreted from the arrangement and orientation of veins within the Brunswick Slab (Dorsey Vein Set), and outside of the slab (Morehouse Vein Set). Ramp-like dislocations along the contact, with fault structures extending into the slab, may explain the development of isolated groups of veins within the Brunswick Slab in the deeper developments of the mine. Vein set development outside of the slab may be associated with the same fault structures extending outward into the serpentinites from the dislocation site.

For example, at the Idaho 2000 level, the Idaho 110 Vein was developed in a 10° SE dipping fault plane within the Brunswick Slab. A new vein structure was encountered in the drift southward along the contact of the slab, localized at a point of dislocation in the slab contact. This new vein matches closely in orientation and attitude with the Idaho 110 Vein. It is worthy of note that the cross cut driven eastward into the slab connecting the Idaho 16 Vein hanging wall with the 110 Vein intersected a large body of mineralized rock. This mineralized body is described as a mass of quartz stringers cutting mineralized diabase. Assays from an interval of mineralized rock without quartz stringers yielded 0.19 oz/ton (6.5 g Au/t). The structural conditions at this location are presently unclear, but imply that large bodies of gold mineralization may exist in association with the Morehouse Fault. This target type warrants investigation.

### 7.3.5 The Brunswick 20 Series Faults

At the eastern end of the large Brunswick Slab, a series of dislocation planes called the 20 Faults occurs. The 20 Faults are sub-parallel to, and found within 1,000 ft (300 m) of, the Weimar Fault. The member faults dip steeply west to near-vertical. The individual faults converge into the Weimar Fault updip. Their course in plan view is 330° to 350° and they are notably sinuous. The 20 Faults cut the volcanic stratigraphy and Brunswick Vein Set at an obtuse angle. Relative displacement of individual Brunswick quartz veins bearing 275° to 290° is approximately 6.6 ft (2 m) in a right-lateral sense. Members of this family include the 20, 21, 21a, 21b, 22, and 23 Faults.

The 20 series of faults exert locally important controls on oreshoots in the Brunswick Vein Set. The crossing of Brunswick Veins by members of the 20 Fault set can limit oreshoots in some cases, but is not a persistent feature in most areas of the Brunswick



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workings. The 20 Faults, in conjunction with a Brunswick vein crossing a bed of interflow graphitic meta-sediments, results in a black slate-type oreshoot of large dimensions. The Brunswick 7 and 12 Veins appear to be dragged and horse-tailed against one of these cross faults, resulting in 40 to 55 ft (12 to 16 m) wide quartz stringer zones. Adjacent Brunswick Veins are relatively unaffected in comparison. The 20 Faults locally contain mineralized vein quartz in a similar fashion to that noted in the Weimar Fault.

### 7.3.6 The Brunswick Stacked Faults

At the northeastern corner of the Brunswick Tectonic Slab is a stacked series of shallowly northeast-dipping fault/veins. They are associated with the junction of the Weimar Fault and the Idaho Deformation Corridor and are most commonly found within 1,000 ft (300 m) of that wedge area. Well-known members of this vein/fault array are the Brunswick 4, 11, 34, 36, 41, and 48 Veins. Members of this fault set exert important controls on the location of exceptionally high-grade oreshoots and exceptionally large stockwork-veined deposits. Both deposit types occur where members or swarms of stacked faults disrupt the steep Brunswick Veins. Oreshoots in Brunswick veins will continue upward through an intersection of this type. It is consistently noted that strong gold mineralization will proliferate outward from the steep vein into the shallow dipping vein for distances of 50 to 100 ft (15 to 30 m) laterally. Where the arrangement of steep Brunswick veins is close, this can result in large areas of stockwork veining that mimic the shape of the flatter structures. The intersection of the shallow-dipping Brunswick 4 Vein with the steep 7 and 17 Veins resulted in a shallow-dipping stope 200 x 400 ft (60 x 120 m) in an area with a maximum true width of 50 ft.



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### 8.0 DEPOSIT TYPES

The Idaho-Maryland Mine is a structurally controlled, mesothermal lode gold deposit for which Emgold has developed a revised, comprehensive deposit model. This model identifies structural features that act as potential hosts to auriferous vein sets and account for the varied deposit types and vein arrays that can occur within any individual vein set. This model is schematically shown in Figure 8-1.

The development of mineralized vein sets are controlled by four structural features. These are:

- mine-scale boudinage neck features developed within the serpentinite matrix of the Spring Hill Mélange unit
- contact areas of the tectonic slabs within the serpentinite matrix of the Mélange unit
- local flexures and irregularities in the plane of the Weimar Fault Zone can create quartz stockwork zones
- high-grade vein arrays localized underneath prominent, shallowly dipping link fault/veins of fault duplexes

The mineralization is further controlled in veins of a particular vein set by any one of seven structural settings. They are:

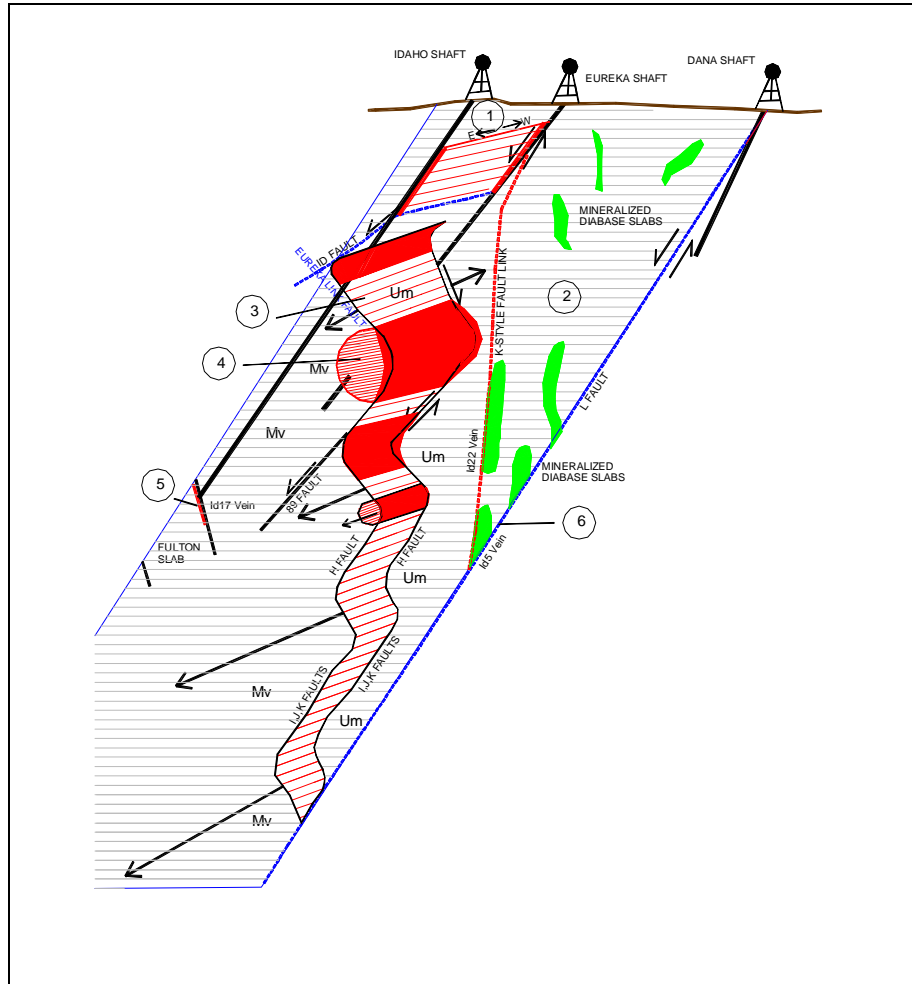
- Rock competency contrast areas: development of an oreshoot along the contact between soft, ductile serpentinite and hard, brittle tectonic slabs at bends along the contact, at dilational jogs, or at offsets/benches in contact associated with incipient attenuation and boudinage
- Wedge-shaped areas between intersecting faults: stacked arrays of shallowly dipping veins can comprise large bulk mineable deposits containing free gold
- Simple concave or convex bends along fault planes
- Vein splits, which are usually manifested at bends along fault planes
- Drag folding of vein structures associated with cross faulting, resulting in vein horsetails and/or mirror-image oreshoots localized in the vein on both sides of a cross fault
- Intersection of steep and shallowly dipping vein members of any vein sets.



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**Figure 8-1: Idaho-Maryland Mineralization Types**



Lithology of the vein-hosting units can also be important in localizing mineralization within vein sets. Three lithologic controls are identified:

- Highly graphitic fault planes or partings within interflow sedimentary units. These are found within tectonic slabs composed of intermediate volcanic/volcaniclastic rocks.
- competent/incompetent rock unit contacts .
- iron-enriched mafic lithologies. These would include pyritized, chloritized diabasic slabs.



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### 9.0 MINERALIZATION

The veins consist primarily of quartz, which is milky white, massive to banded, sheared, and brecciated. Gold occurs as native gold, ranging from very fine grains within the quartz to leaves or sheets along fractures. Other constituents occur in minor to trace amounts and comprise calcite, sericite, mariposite, magnesite, and scheelite. Sulfide minerals are ubiquitous in the quartz veins (1 to 4 visual percent) and consist primarily of pyrite. Galena, chalcopyrite, and various tellurides are present in trace concentrations. Sphalerite and arsenopyrite are only rarely observed.

The varying styles of mineralization present at the Idaho-Maryland Project are typical of those commonly found in mesothermal lode gold deposits worldwide. At least four basic types of mineralization have been recognized to contain significant gold deposits. In order of importance, these include (1) gold-quartz veins, (2) mineralized black slate bodies, (3) mineralized diabasic slabs, and (4) altered, mineralized ultramafic schists. These are discussed in more detail below.

#### 9.1 Gold-Quartz Veins

##### 9.1.1 Quartz Veins & Immediate Wallrocks

Quartz veins and their immediate wallrocks (Figures 7-3 and 8-1) have produced over 80% of the gold at the Idaho-Maryland Mine. The gold-bearing quartz veins are structurally complex, strike in all compass directions, and have attitudes that range from horizontal to vertical. The economic veins ranged from 1 to 25 ft (0.3 to 7.6 m) in thickness. The largest vein ore shoot was 650 ft (200 m) in vertical extent and plunged continuously at a shallow angle for 5,600 ft (1.7 km).

The morphology of the veins varied from tabular veins and stringer zones, to oblique-extension veins exhibiting exotic centipede structures. The veins are generally tabular, ribboned to massive quartz, and contain minor gangue and accessory minerals. Vein gangue includes minor carbonate phases along selvages (ankerite, calcite, dolomite, and ferrodolomite), sericite, chlorite, and albite. Pyrite is by far the dominant accessory mineral, constituting 1% to 2% of the ore. The mineralized, schistose vein wallrock commonly constituted ore, locally up to 10 ft (3 m) into either or both walls of the vein. The gold-bearing wallrocks contained large quantities of carbonate, with lesser sericite, chlorite, and albite. Accessory pyrite was reported in the wallrocks at similar concentrations to those found in the vein. Gold tenor of the quartz vein ores ranged from 0.10 to 10.00 oz/ton (3 to 350 g/t) for individual stopes.



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### 9.1.2 Large Quartz Stockwork Vein Deposits

Partial mining of a large quartz stockwork vein deposit accounted for 1.5% of total gold production from the Idaho-Maryland Mine. This large resource was delineated in the late 1940s and remains unexploited. This type of mineralization consists of a reticulated mass of steep and shallowly dipping quartz veins and veinlets. Vein quartz constitutes 20% to 80% of the mineralized rock by volume. The overall shape of the zone mimics the orientation of the shallowly dipping veins in the set. The dimensions of this body are 250 ft (75 m) in strike length, 950 ft (290 m) in dip length, with an average true thickness of 75 ft (23 m). The maximum true thickness is 122 ft (37 m).

The quartz stockwork veined mineralization shares common characteristics with the other Idaho-Maryland mineralization types. The intermediate meta-volcanic host rocks are bleached and pervasively ankerite + sericite + chlorite + pyrite altered. A minor quantity of disseminated pyrite was the only accessory mineral reported. Coarse particulate free gold was present, but occurred less frequently in stockwork ores compared to all other mineralization types. Gold tenor for stockwork veined material is in the range of 0.10 to 0.20 oz/ton (3 to 7 g/t). The stockwork zone had irregular walls that were determined visually by the degree of shattering and the intensity of subsequent vein filling.

The primary control for stockwork veined bodies was related to bends in the plane of the adjacent Weimar Fault. Shattering was directed into the brittle meta-volcanic wallrock at these locations.

### 9.1.3 Tensional Vein Arrays

Tensional vein arrays localized in wedge areas between intersecting faults have contributed an unknown percentage of the gold production at the mine. Stacked arrays of shallow-dipping quartz veins can constitute large, potentially bulk mineable deposits. Known examples have plan dimensions of (50 x 50 ft to 50 x 220 ft (15 m x 15 m to 15 m x 70 m), with the down rake projection being the long axis of the deposits. An extreme example is the mineralized wedge at the Id2 Vein to Id3 Vein junction, which has been documented on seven mine levels from the Idaho 1600 to 3000 levels, this suggesting a rake length of over 3,300 ft (1,000 m). Other examples include mineralized wedges at the following functions: Id3 Vein to Id25 Vein, Idaho Fault–L Fault, Br9 Vein to Br10 Vein, Br2 Vein to Br6 Vein, and Br2 Vein to Br32 Vein. The ore minerals, gangue minerals, accessory minerals, and alteration types are all similar to those described for the stockwork vein mineralization type, and coarse free gold is noted as is customary in all mineralization types at the mine. Expected gold tenor of mineralized wedge ores is in the range of 0.10 to 0.40 oz/ton (3 to 14 g/t). Visual



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estimation of vein density determines the boundaries. Variations in the plunge inclination have been assumed to control the fracture intensity and economic boundaries.

### 9.2 Mineralized Black Slate Deposits

Graphitic black slate bodies (see Figure 9-1) have produced approximately 5% of the gold at the Idaho-Maryland Mine. The mineralized black slate bodies develop exclusively out into the hanging wall of a tabular quartz vein, coincident with an important set of northwest-trending, steeply dipping cross faults. Three known mineralized slate bodies range from 20 to 100 ft (6 to 30 m) in thickness and constitute large bulk-mineable oreshoots in the mine. The maximum dimensions are 300 ft (90 m) in vertical height and horizontal length. Very coarse gold is contained within a stacked array of highly graphitic flat fault planes of 0.2" to 2.0" (0.5 to 5 cm) thick, flat quartz veinlets that cut the steeply dipping meta-sediments. The host rock ranges from slate to medium-grained wacke. The only reported gangue minerals were heavy amounts of graphite and trace vein carbonate. Accessory fine-grained pyrite occurred in minor amounts up to 1%. The ore mineral was coarse particulate free gold. Flat plates up to 3" x 4" (5 x 10 cm) in dimension without vein quartz were found puddled in low spots along highly graphitic flat planes. The gold tenor of this ore averaged 0.20 to 0.25 oz/ton (7 to 9 g/t). Past employees have indicated that simple screening of the +6" (+15 cm) fraction would have doubled the millhead grade of this material. Mill records indicate that recoveries of gold from black slate ores averaged 80%, the highest for all the mineralization types.

### 9.3 Mineralized Diabasic Slabs

Mineralized diabasic slabs (see Figure 8-1) have produced approximately 3% of the gold mined from the Idaho-Maryland deposit. The mineralized diabasic bodies are foliated, folded, and deformed mélange slabs that have no predictable occurrence within the mine. They were generally discovered in exploratory core drilling and crosscuts. Mineralized diabasic slabs range from 3 to 36 ft (1 to 11 m) in thickness, with a maximum length of 400 ft (120 m) measured along the shallow plunge of the body. Stringer zones of quartz veinlets can constitute up to 10% of the volume. Gangue minerals included abundant carbonate phases, chlorite, and sericite. Euhedral cubic pyrite was the only reported accessory mineral, and gold was the only ore mineral. The gold tenor of mineralized diabase was 0.20 to 1.0 oz/ton (7 to 35 g/t) for individual bodies. Gold recoveries were reported to be similar to those for the quartz vein ores.

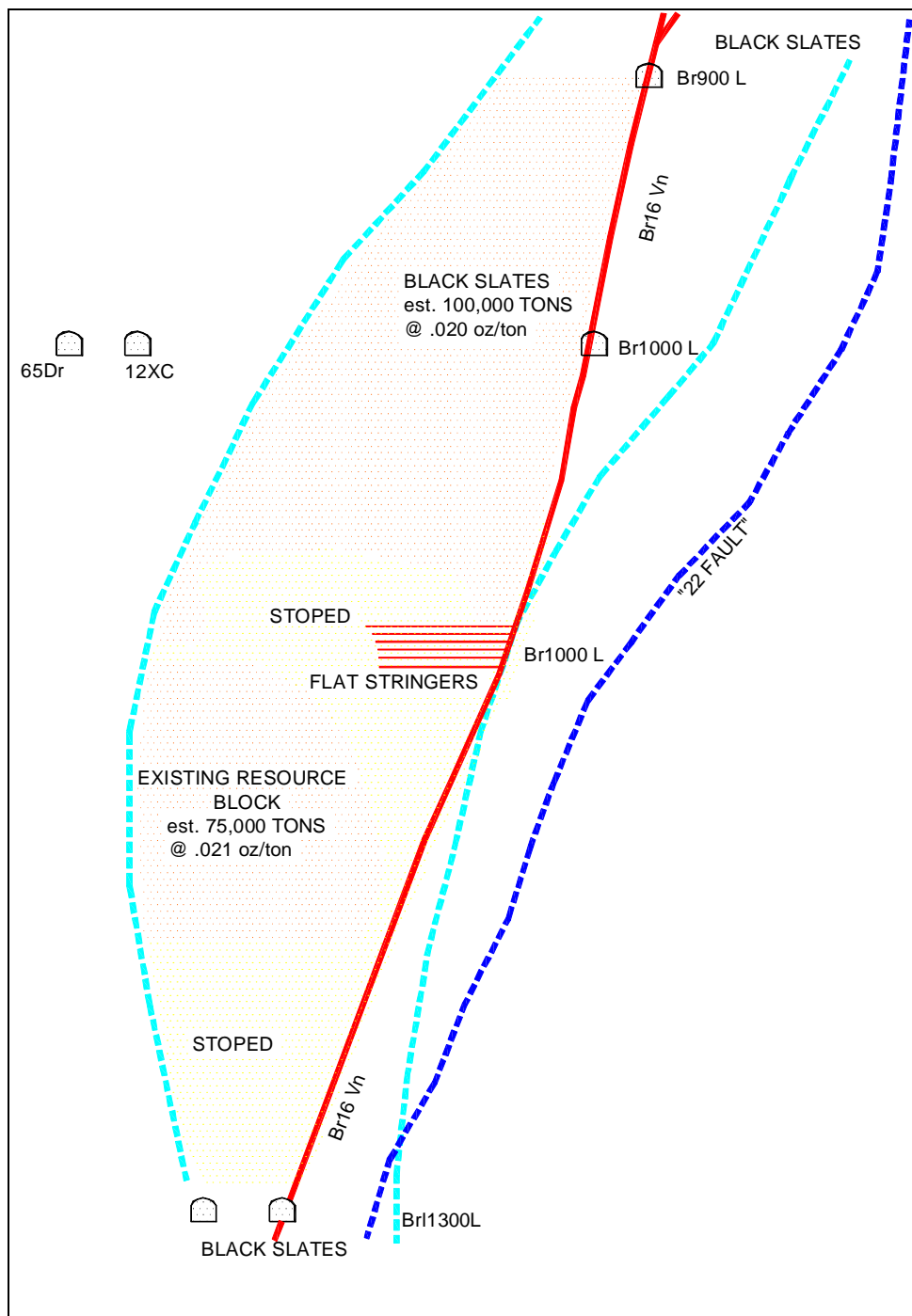




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Figure 9-1: Mineralized Black Slate Deposits – Vein BR16 Area





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### 9.4 Mineralized Ankerite or Talc Schists

Mineralized ankerite or talc schists (Figure 7-3) that developed along shear zones have produced less than 1% of the gold at the Idaho-Maryland deposit. They were hosted in an altered ultramafic *mélange* matrix and in altered intermediate meta-volcanics of *mélange* slabs. At the Idaho 2000 level, the Idaho 3 Vein showed rapid gradation from a vein quartz lode to a mineralized schist lode, with stringer zones of quartz veinlets constituting 0% to 10% of the volume. Gangue minerals included abundant talc or carbonate, and the lone accessory mineral was disseminated pyrite. Free gold, found along foliation planes, was the only ore mineral produced. The gold tenor of the mineralized schists averaged 0.10 to 1.0 oz/ton (3 to 35 g/t) in individual stopes.



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### 10.0 EXPLORATION

Exploration at the Idaho-Maryland project consisted of an extensive geologic evaluation program during 1993 through to 2000. This rather unique program was possible because of the excellent and comprehensive preservation of the Idaho-Maryland mine and mill records. These data are exhaustive and essentially complete, and were used to generate a consistent, property-wide structural geology model and vein set stratigraphy. Unmined mineralization was identified along underground workings and in historical diamond drill holes. Interpretation of the updated geologic model defined new vein sets and extensions of known vein sets. These were categorized for mineral resource estimates and future exploration.

#### 10.1 Data

The available key historic data consisted of:

- 3,200 mine maps and drawings, including 1,257 line maps (1" = 50 ft assay plans, geology plans and stope plans, 1" = 100 ft geologic cross sections).
- 1,100 photographs (surface and underground)
- monthly development reports for 1921 to 1956
- monthly geological summary reports for 1936 to 1942
- eight ledgers of development and stope sampling assays
- assay reports of diamond drilling, channel samples and muck car samples
- general manager's and mine superintendent's reports for 1947 to 1953
- mill production reports and cost summaries for 1934 to 1956.

The main underground levels and winzes were measured and input into a 3-D wireframe computer model using Vulcan®.

#### 10.2 Review Results

The review of the historic data yielded a revised, comprehensive geological model for the Idaho-Maryland project. Details are described in Sections 7, 8, and 9. Important results from the review are:



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- The concept of tectonic fragments or slabs within the Spring Hill Tectonic Mélange (e.g., Brunswick slab, Fulton slab) to explain variability in strike and dip / plunge attitudes of veins.
- Consistent structural interpretation, on both a property and local (stope) scale. Key in this interpretation is the Idaho Deformation Corridor and its make-up of a braided network of high-strain zones, and definition of the Morehouse Fault as an arcuate, structure along the Brunswick tectonic slab.
- Development of a deposit type definition for the Idaho-Maryland that forms the basis for the positive exploration potential of new mineralized veins or structures. Four structural features are defined as potential hosts to mineralized vein sets (Figures 7-3 and 8-1):
  1. Boudinage neck features in the serpentinite matrix of the mélange unit
  2. Tectonic slabs in the serpentinite matrix of the mélange unit.
  3. Flexures and irregularities in the plane of key fault zones that create shattered, quartz stockwork zones which can host large, more homogeneous, lower grade blocks
  4. High-grade vein arrays localized underneath shallowly-dipping link faults / veins in fault duplexes.

The revised interpretation is consistent with the observation of variable to arcuate vein/structure strike orientations and high angle to flattish dips and plunges within these same features.

### 10.3 Discussion

The revised Idaho-Maryland geologic model (see Section 8.0) allows Emgold to evaluate areas among the known structures and veins for new vein set targets. Carefully designed multiple drill hole programs will be necessary to effectively test these targets in light of the complex geology and variable geometry of the mineralized veins. AMEC recommends a surface diamond drilling campaign in the area of the Eureka and Idaho shafts. A schematic of the types of targets available are represented in Figures 7-3 and 8-1. These targets lie in the Idaho Structural Corridor. Three to five target areas should be selected, permitted for surface drilling, and drilled. Hole lengths would range from 600 ft (200 m) to 1,400 ft (425 m).



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Eventually Emgold will have to continue the exploration and delineation effort from underground stations. Best areas for relatively shallow, higher-grade mineralization occur around the Idaho shaft, based on the reinterpreted geology and occurrence of inferred resource blocks (Id87 and Id01 to Id03). Access for the drilling would be from an exploration decline. This option is currently being evaluated in a preliminary assessment study on the Idaho-Maryland.



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### 11.0 DRILLING

During mining of the Idaho-Maryland deposits, exploratory and delineation diamond drilling regularly took place. Eleven hundred holes totaling 230,000 ft (70,000 m) were diamond drilled, commonly to a 0° dip (horizontal). Core diameter was 7/8" (E-size). Hole traces were put onto the assay, stope, and geology various plans, as was all other information. No drill logs were observed.

Down hole surveys were not conducted, and deviation of the drill holes was common. Recorded in the geology monthly reports were experiences such as driving an underground heading on a drill hole only to find that the hole soon curved significantly from the planned orientation. The deviation was not consistent, and so could not be predicted. This observation was one of the main reasons AMEC recommended that mineral resources defined by drilling alone should be classified as inferred mineral resources (see Section 17).

No core was preserved from past mining operations at the Idaho-Maryland Mine.

**Table 11-1: Intercepts of Unmined Mineralized**

DDH #	Intercept (ft)	Calc True Width (ft)	Gold Grade <sup>1</sup>		Vein No.
			opt	g/tonne	
ID-500-2	26.0	25.4	0.21	7.2	Id87
ID-600-5	12.0	4.6	0.16	5.5	Id13
ID-600-6	6.5	4.4	0.14	4.8	Id13
ID-600-9 including	23.0	22.7	0.11	3.8	Id87
	7.0	6.8	0.28	9.6	Id87
ID-850-2	8.7	3.5	0.71	24.3	Id14
ID-1100-4 including	42.0	16.6	0.11	3.8	Id88
	10.0	3.9	0.34	11.7	Id88
ID-1500-24	12.5	11.5	0.38	13.0	Id22
ID-2000-7	10.0	9.3	0.18	6.2	Id6



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DDH #	Intercept (ft)	Calc True Width (ft)	Gold Grade <sup>1</sup>		Vein No.
			opt	g/tonne	
ID-200-24	48.3	24.3	0.11	3.8	ld78
including	12.1	6.1	0.29	9.9	ld78
ID-2350-2	10.0	4.4	0.10	3.4	ld85
including	4.0	1.8	0.17	5.8	ld85
ID-2350-3	15.0	8.5	0.10	3.4	ld84
including	6.0	3.4	0.15	5.1	ld84
ID-2400-4	31.5	26.2	0.09	3.1	ld31
including	3.5	2.9	0.23	7.9	ld31
ID-2400-18	27.5	18.7	0.10	3.4	ld93
including	5.0	3.4	0.24	8.2	ld93
ID-2400-30	103.9	48.7	0.29	9.9	ld53
including	12.9	6.0	0.17	5.8	ld53A
including	3.6	1.7	0.38	13.0	ld53
including	4.7	2.2	0.53	18.2	ld53
including	14.4	6.7	0.15	5.1	ld53B
ID-2400-31	35.0	18.7	0.35	12.0	ld53
including	9.0	4.8	1.20	41.2	ld53
ID-2400-33	53.0	49.2	0.05	1.7	ld53
including	4.2	3.9	0.16	5.5	ld53
ID-2400-36	23.0	15.7	0.13	4.5	ld53
including	3.0	2.0	0.73	25.0	ld53
ID-2400-40	2.0	1.2	0.37	12.9	ld92
And	41.0	25.6	0.10	3.4	
including	13.4	8.4	0.19	6.5	ld01A
including	2.7	1.7	0.70	24.0	ld01A
including	8.0	5.0	0.13	4.5	ld01
including	3.5	2.2	0.16	5.5	ld01
including	4.5	2.8	0.11	3.8	ld01
ID-2700-9	14.0	3.3	0.18	6.2	ld02J
ID-2700-15	171.5	168.4	0.10	3.4	





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DDH #	Intercept (ft)	Calc True Width (ft)	Gold Grade <sup>1</sup>		Vein No.
			opt	g/tonne	
including	4.5	4.4	0.15	5.1	Id95
including	5.5	4.1	0.14	4.8	Id96
including	22.5	22.1	0.15	5.1	Id59
including	17.0	16.7	0.39	13.4	Id97
ID-2700-19	25.5	6.4	0.29	9.9	Id02
including	9.0	2.3	0.57	19.5	Id02
ID-2700-20	19.0	5.1	0.26	8.9	Id02
ID-2700-23	12.5	10.5	0.36	12.3	Id51B
ID-2700-24	11.3	6.1	0.21	7.2	Id57
including	6.0	3.2	0.32	11.0	Id57
ID-2700-30	3.7	1.4	0.14	4.8	Id57
And	39.7	14.8	0.12	4.1	Id53
including	4.0	1.5	0.15	5.1	Id53D
including	15.8	5.9	0.22	7.5	Id53
And	3.5	1.3	0.15	5.1	Id53C
ID-2700-32	0.8	0.7	1.06	36.3	Id02H
ID-2700-42	5.0	3.5	0.22	7.5	Id51C
including	1.0	0.7	0.70	24.0	Id51C
BR-900-10	75.5	25.0	0.07	2.4	
including	13.0	4.3	0.17	5.7	Br57
BR-900-35	7.0	3.2	0.15	5.1	Br58
BR-900-39	8.4	4.1	0.19	6.5	Br58
including	4.3	2.1	0.33	11.3	Br58
BR-900-40	6.5	4.3	0.27	9.3	Br58
BR-1000-1	20.5	19.2	0.20	6.9	
including	12.5	11.7	0.25	8.6	Br07
BR-1000-10	10.0	7.4	0.18	6.2	Br12



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DDH #	Intercept (ft)	Calc True Width (ft)	Gold Grade <sup>1</sup>		Vein No.
			opt	g/tonne	
BR-1000-15	14.0	5.1	0.46	15.8	Br55
BR-1300-6	85.0	82.2	0.04	1.4	
including	6.0	5.8	0.25	8.6	Br10
BR-1300-11	106.5	96.6	0.06	2.1	
including	15.0	13.6	0.27	9.3	Br51
including	4.5	4.1	0.07	2.4	Br49
BR-1300-12	89.0	62.3	0.04	1.4	
including	12.0	8.4	0.05	1.7	Br51
including	10.0	7.0	0.15	5.1	Br49
BR-1300-14	65.3	60.4	0.04	1.4	
including	4.0	3.7	0.15	5.1	Br52
including	3.0	2.8	0.35	12.0	Br31A
including	1.3	1.2	0.19	6.5	Br31
BR-1450-23	40.6	33.1	0.04	1.4	
including	2.7	2.2	0.16	5.5	Br28
BR-3280-7	19.2	14.2	0.21	7.2	Id50
including	3.1	2.3	1.05	3.6	Id50
BR-3280-8	9.0	8.8	0.28	9.6	Id05
including	2.9	2.8	0.65	22.3	Id05
BR-3280-9	5.2	5.1	0.14	4.8	Id99
And	25.4	24.7	0.06	2.1	
including	3.2	3.1	0.10	3.4	
including	7.0	6.8	0.12	4.1	Id05A
And	8.8	8.6	0.15	5.1	Id05
And	0.8	0.7	0.67	23.0	Id05B
BR-3280-19	2.9	2.3	0.35	12.0	Id25A
BR-3280-25	1.5	1.3	0.47	16.1	Id25A
And	1.7	1.4	0.36	12.3	Id25B
And	174.7	67.0	0.05	1.7	
including	6.0	2.3	0.65	22.3	Id02
And	4.5	1.7	0.11	3.8	Unknown



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DDH #	Intercept (ft)	Calc True Width (ft)	Gold Grade <sup>1</sup>		Vein No.
			opt	g/tonne	
And	9.3	3.5	0.16	5.5	Unknown
including	4.1	1.6	0.28	9.6	Unknown
And	5.6	2.1	0.10	3.4	Unknown
And	1.9	0.7	0.12	4.1	Unknown
BR-3280-34	5.6	4.8	0.21	7.2	Id03
BR-3280-35	7.4	7.3	0.24	8.2	Id03
BR-3280-36	15.8	15.6	0.14	4.8	Id03

1. Grade has been calculated by a factor of 1 oz/short ton = 34.287 g/tonne.



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### 12.0 SAMPLING METHOD & APPROACH

This subject is discussed in Section 13.



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### 13.0 SAMPLE PREPARATION, ANALYSES & SECURITY

This project contains an historic database with over 36,000 assays. The assays, which are almost exclusively for gold, were done on samples taken from underground workings (walls and backs from drifts and crosscuts, walls from raises). Many are channels samples; fewer are muck car samples and grab samples. Those from diamond drill holes comprise only a minor portion of the assay database.

The assay data reside as handwritten entries on scale assay plans (1" to 50 ft) for all mine levels. Drill hole assay data accompany the intercepts on these plan maps, and copies of assay certificates are present for the final 10 years of production.

The samples were fire-assayed at former mine site laboratories. No records exist of any QA/QC program. Sample quality can still be inferred, however, by the reconciliation of historic production records to underground sample data. These studies, as well as a recent investigation on mill-to-resource prediction (see Section 17), show that the resource or reserve estimates consistently underestimated the amount of gold produced by milling, a discrepancy most likely reflective of sample size influence rather than laboratory technique. High nugget value deposits with coarse gold areas are best sampled with large sizes, which was not common practice at the time. Therefore, any estimates made using this historic data should include comparisons with values unadjusted and adjusted for the regular underreporting of grade (i.e., call factor).

AMEC believes that the comprehensive set of assay plans, supported by records of muck car stope samples and mapped geology data, as well as the detailed historical production records, all support the integrity of the assay data for the Idaho-Maryland Mine. These data are deemed suitable for use in mineral resource estimation.



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### 14.0 DATA VERIFICATION

Data used in the Idaho-Maryland mineral resource estimate reside on assay plans. AMEC conducted two data transcription checks: one which compared assay values in resource block calculation sheets to the source plan map for various resource blocks throughout the property; and the other which reviewed copies of assay certificates (1946 to 1948) for the Idaho No.1 vein along 2400 level. In the review of assay values, only five errors were found, but the overall error rate was near zero. No errors were observed in the assay plans.

AMEC concludes that the assay data used are sufficiently free of error to be adequate for resource estimation for the Idaho-Maryland project.



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### 15.0 ADJACENT PROPERTIES

This section is not relevant for the Idaho-Maryland Mine project.





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### 16.0 MINERAL PROCESSING & METALLURGICAL TESTING

There exists extensive background information on the metallurgical performance of the ores processed at the Idaho-Maryland and Brunswick properties. On each property was a milling circuit that incorporated crushing, grinding, gravity, sulfide flotation, and gold smelting/refining unit operations. In addition, the Idaho-Maryland mill contained a cyanidation plant with Merrill-Crowe recovery, and a smelting/refining circuit that treated flotation concentrates and sands from both mills. No milling facilities remain from past operations.

#### 16.1 Metallurgical Performance

AMEC reviewed the mill operating statistics for 1934, 1936, 1937, 1938, 1941, and 1947. Results indicate stable overall gold recoveries and metallurgical response to gravity, flotation, and cyanidation:

- Overall gold recoveries ranged from 93.8% to 97.2%.
- Gold production using gravity recovery methods ranged from 61% to 69%, averaging approximately 65.4%.
- The ore contains approximately 1.5% to 2% sulfides. Gold produced via flotation of the sulfides ranged from 30.3% to 36.9% with an average of 33.4%.

Following flotation, the concentrate was reground to further liberate the gold. The remaining 1.2% of the total gold produced was achieved by treating the sands or coarse fraction from the flotation circuit tailings using cyanidation.

Graphite and scheelite containing ore zones have been encountered in the orebody. In the milling circuit, graphite reported to the flotation circuit and was successfully depressed using flotation reagents. Scheelite was recovered using gravity and flotation methods in the 1950s.

Overall gold recovery using modern technology will result in gold recoveries consistent with those achieved in the early milling circuits at the Idaho-Maryland mill. However, it can be expected that gold recovery using current gravitational equipment may exceed the recoveries attained (i.e., average 65%) in the 1930s and 1940s. Testwork to determine the maximum gold recovery potential using gravity separation and concentration is recommended.



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### 17.0 MINERAL RESOURCE & MINERAL RESERVE ESTIMATES

The mineral resource for the Idaho-Maryland property was estimated under the direction of Emgold Qualified Person Mark Payne (Registered Geologist 7067, State of California) using traditional longitudinal sections and 3-D geologic models by commercial mine planning software (Vulcan®). AMEC's review concentrated on the geologic interpretation of the mineralization controls, the most critical factor in the resource estimate. Historic production information was also key in establishing confidence in continuity of mineralization. The mineral resource classification logic was also examined.

#### 17.1 Geologic Models

Gold mineralization at the Idaho-Maryland property resides in 11 discrete vein sets hosting at least four types of mineralization (see descriptions in Sections 7, 8 and 9). The mineralization was organized into five groups for resource estimation: Eureka, Idaho, Dorsey, Brunswick, and Waterman (see Figure 17-1).

A review of historic data was conducted to outline areas of remaining gold mineralization, and a structural geological analysis was conducted to assign a particular mineralization type to a structure and/or vein. Only data that could be reconciled to a geologically consistent interpretation was included in the resource estimate. About 25% of the data identified as remaining and undeveloped was excluded because it was not supported by a coherent interpretation. AMEC believes this approach is consistent with best practice guidelines in resource estimation, and recommends that Emgold continue to work on geological interpretations in areas hosting the excluded material.

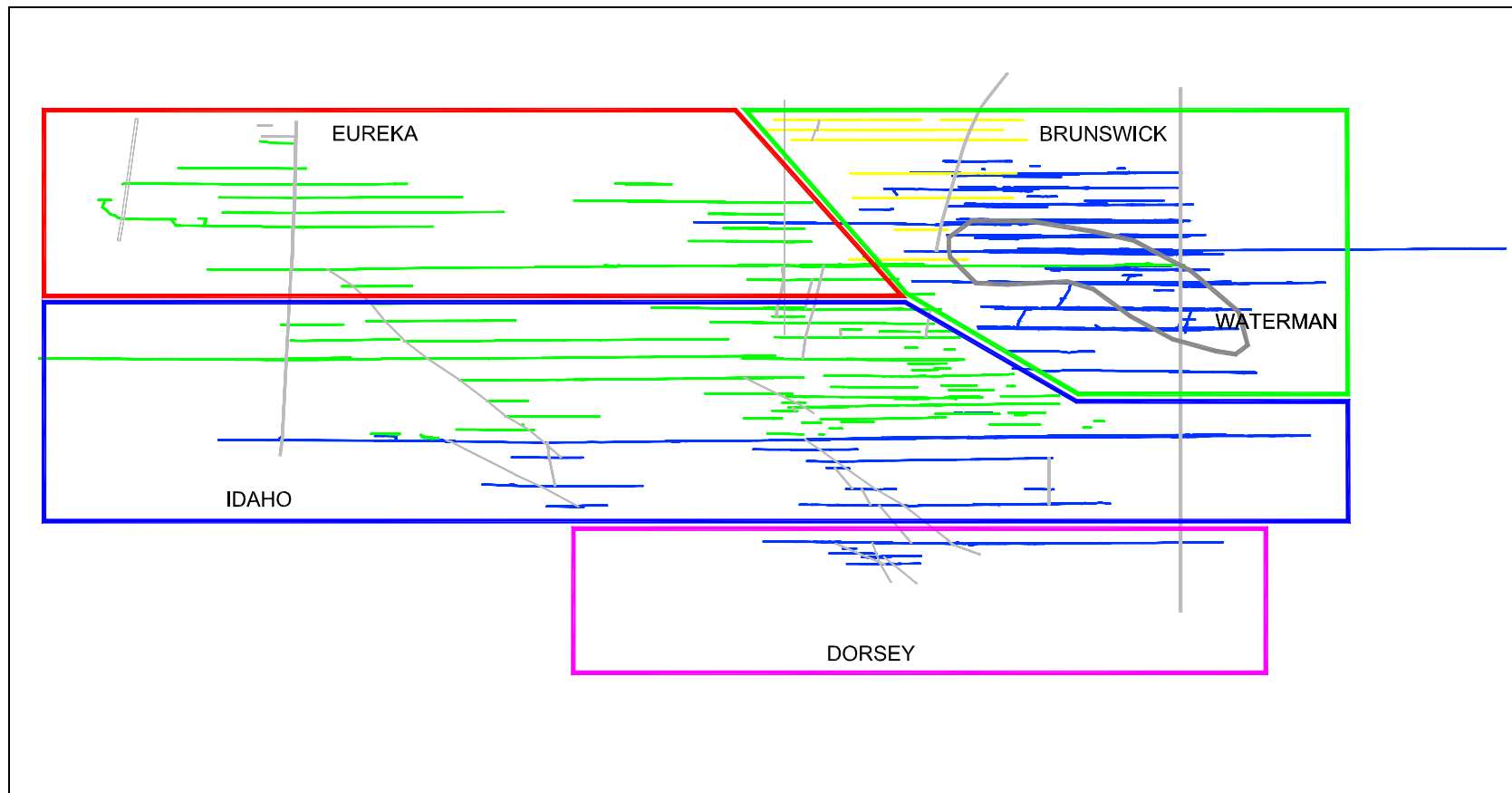
AMEC examined numerous areas of potential resource-bearing material, which generally fell into two categories: those based on underground development information, and those based on diamond drill hole intercepts. Evidence for the pertinent vein/structural interpretation was examined for data support and consistency. All examples based on the underground data demonstrated good data back-up and sound projection limits. Mineralization types were not mixed, and if multiple types occurred in proximity to each other, each was modeled separately. The interpretations based on the drill hole intercepts were also sound and reasonably projected, but were hampered by the uncertainty in spatial location of the drill hole intercept, as they were not down-hole surveyed. In addition, most drill hole areas are defined by widely spaced data (200 ft / 60 m and greater), thus all resources based on single drill hole intercepts were classified as "inferred" resources.



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Figure 17-1: Eureka, Idaho, Dorsey, Brunswick, & Waterman Gold Mineralization





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AMEC checked the thickness calculations of numerous mineralized intervals and found the logic and geometric calculations applied to be correct. Because of the variable dips that occur in a structure and among mineralization types, Emgold is also encouraged to express future work in horizontal or vertical thicknesses. This enables mineralized regions to be easily compared and provides a basis for mine planning work.

### 17.1.1 Structural & Mineralization Continuity

Continuity of geology and mineralization is a key component in a resource estimate, although it is usually based on data configuration and density in undeveloped properties. Past production data of the Idaho-Maryland Mine allow a more exact analysis to be undertaken, based on transcribing stope outlines from mined areas in various vein and structural zones to longitudinal sections.

This type of analysis was done by JAA for their 1991 *Technical Assessment Study* (see Section 3). AMEC reviewed their findings and concurs with the method employed and the results obtained. The JAA analysis confirmed that the Idaho-Maryland vein systems demonstrate high horizontal and vertical structural/vein continuity, with horizontal lengths ranging from 45 m (150 ft) to 515 m (1,690 ft) to a maximum of 1,705 m (5,600 ft), and averaging 270 m (885 ft) for the vein systems reviewed. JAA also assessed vertical geologic continuity by examining the mined areas between levels 3280 and 580. Vertical extent ranged from 30 m (100 ft) to 825 m (2,700 ft), averaging 185 m (615 ft).

To assess gold mineralization distribution, JAA investigated the presence of a mineralized and non-mineralized vein or structural material (defined at a threshold of 0.07 oz/ton Au) along a horizontal or vertical stope length. The assumption was that a stope defined a mineralized entity that was extracted as "ore." No further selection was done to optimize grade during extraction. The JAA analysis revealed that in any given stope, about 45% of the length contains mineralization above the threshold value. The remainder would represent internal dilution.

### 17.2 Data Analysis

Assay plan maps were inspected to review the gold data. Additionally, four sets of underground sample data taken from four different vein systems (the Idaho No.1, Idaho No.2, Dorsey veins (60 winze area) and Brunswick veins (1948 sampling)) were statistically analyzed. The mineralization systematically contained high to very high-grade pods along a horizontal or vertical length. Previous reviews by JAA and



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Drummond concluded that a high nugget effect is present, and an evaluation of the high-grade distribution can only be done on data from extensive underground sampling.

AMEC analyzed the data sets on a series of histograms and probability plots (see Figures 17-2 to 17-5). Although this only represented a "snapshot" view of the Idaho-Maryland mineralization, it yielded the following interesting results:

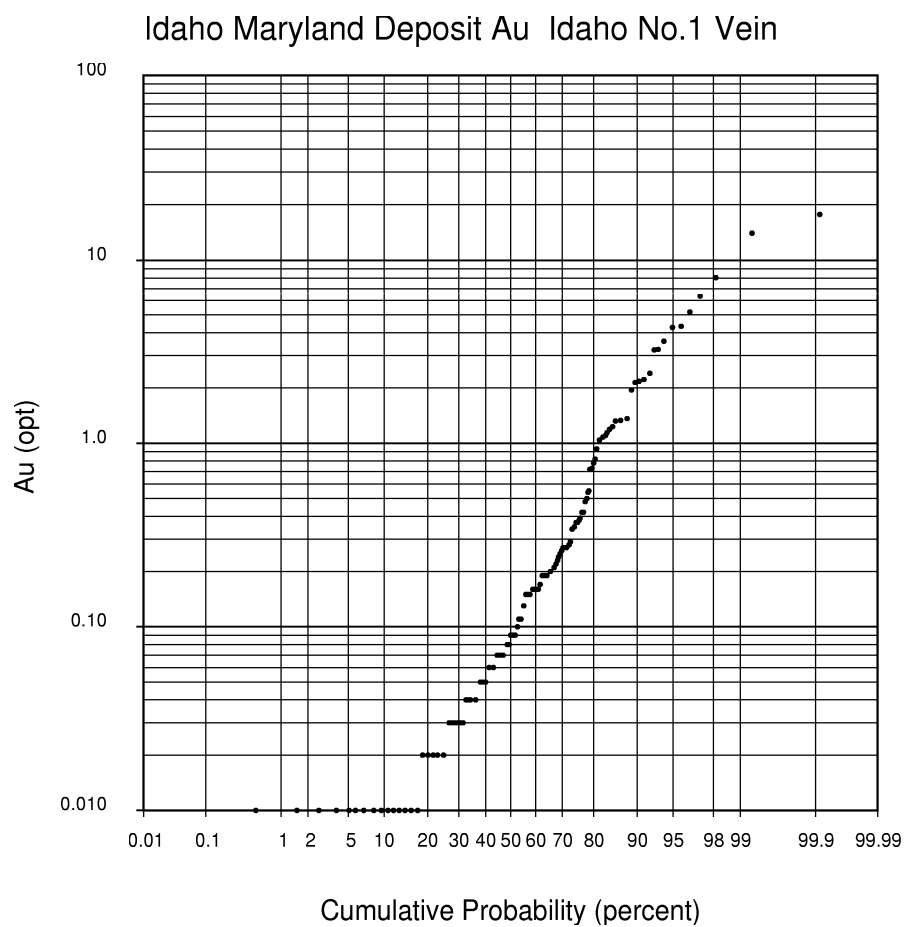
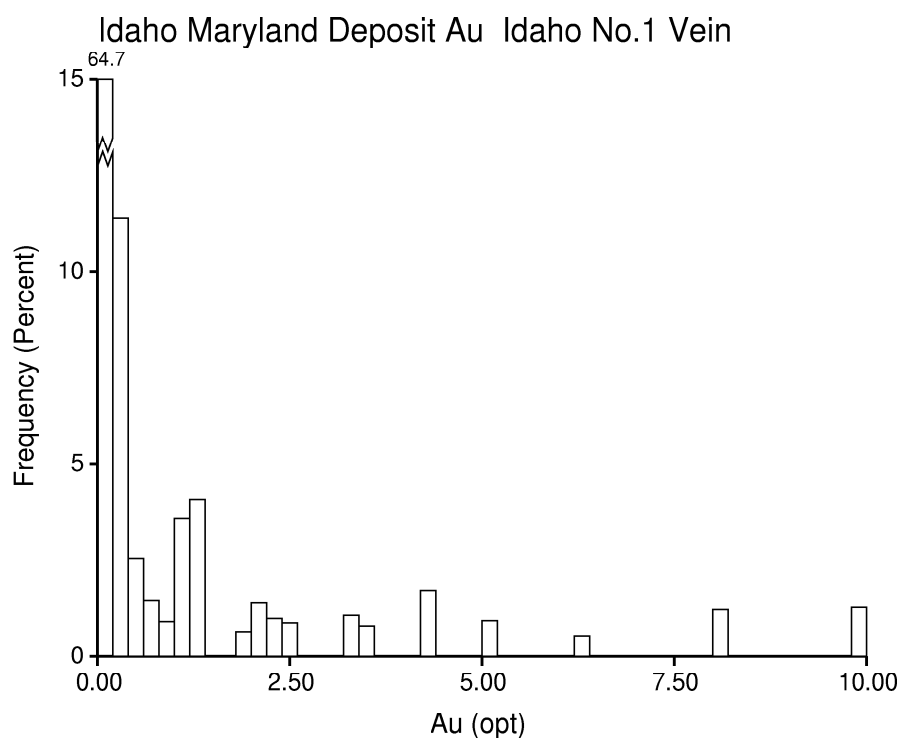
- The distribution on the cumulative probability plots shows typical lognormal trends.
- Each vein system does appear to have a unique grade distribution (see Table 17-1).
- The higher-grade distributions (greater than 1 oz/ton (34 g/t) Au values) are a integral part of a system's population.

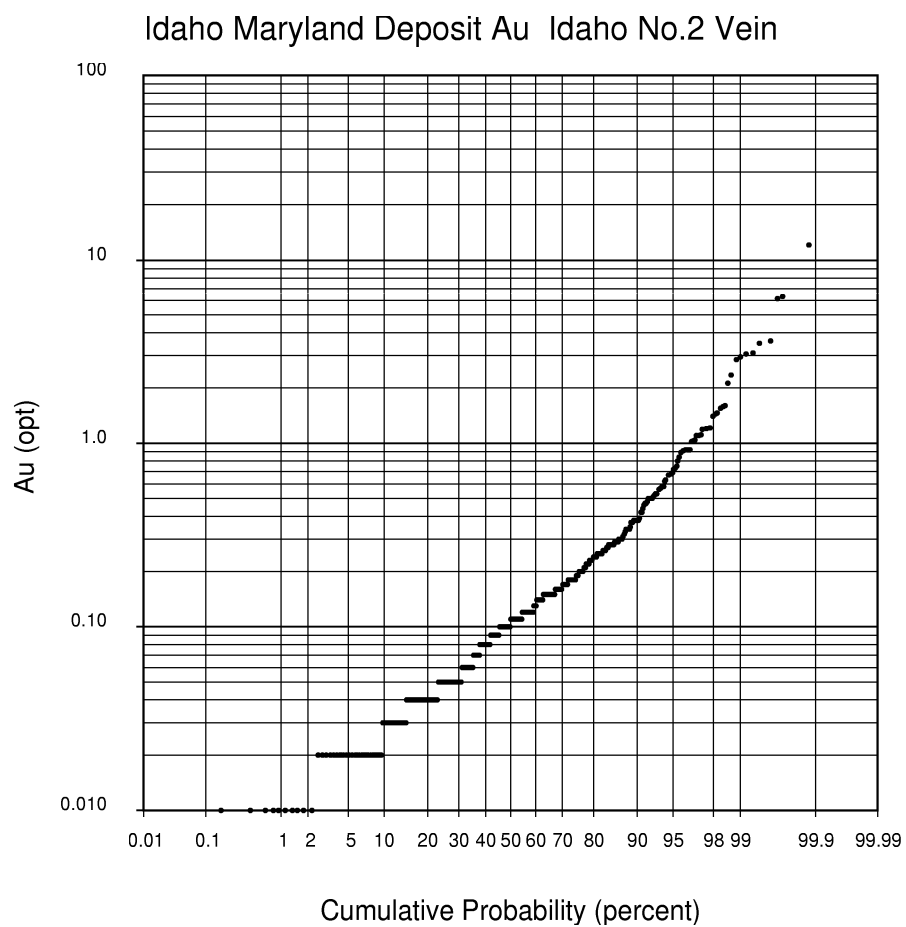
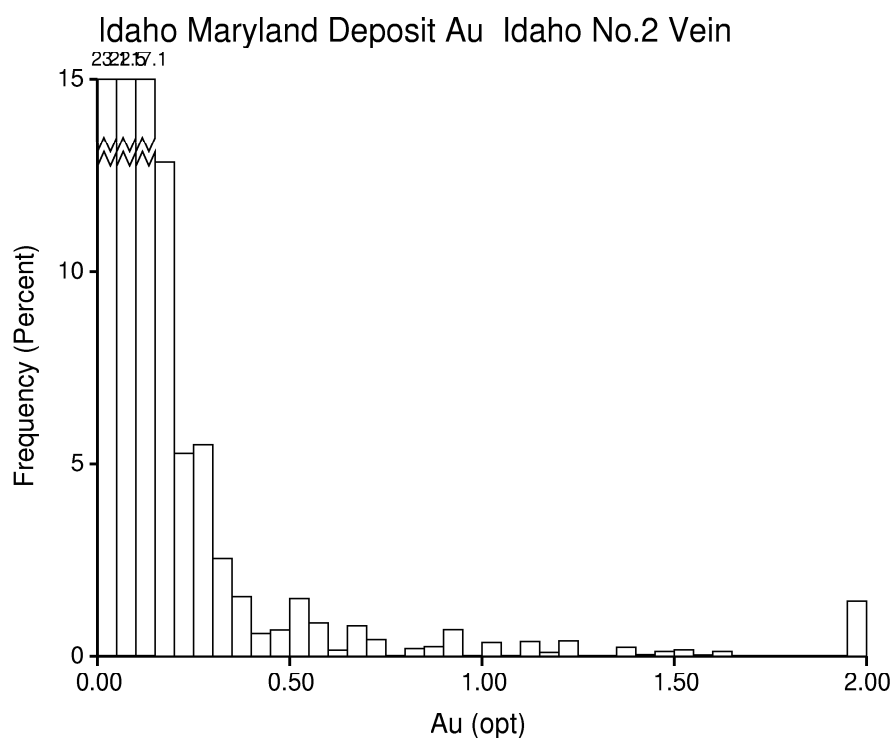
**Table 17-1: Statistical Data from Idaho No.1, Idaho No.2, Dorsey Area & Brunswick Vein Systems. Gold values are in oz/ton.**

VEIN	Samples	Mean	Median	Coefficient of Variation	Value at 75 <sup>th</sup> Percentile	Value at 80 <sup>th</sup> Percentile	Value at 95 <sup>th</sup> Percentile	Value at 98 <sup>th</sup> – 99 <sup>th</sup> Percentile	Maximum Value
Idaho No.1	113	0.77	0.09	2.65	0.37	1.00	4.0	8.0	17.7
Idaho No.2	452	0.23	0.11	3.09	0.19	0.23	0.7	1.5	12.1
Dorsey	2,240	0.28	0.10	2.69	0.19	0.25	1.1	4.0	12.1
Brunswick	949	0.22	0.07	6.24	0.13	0.18	0.6	2.0	40.2

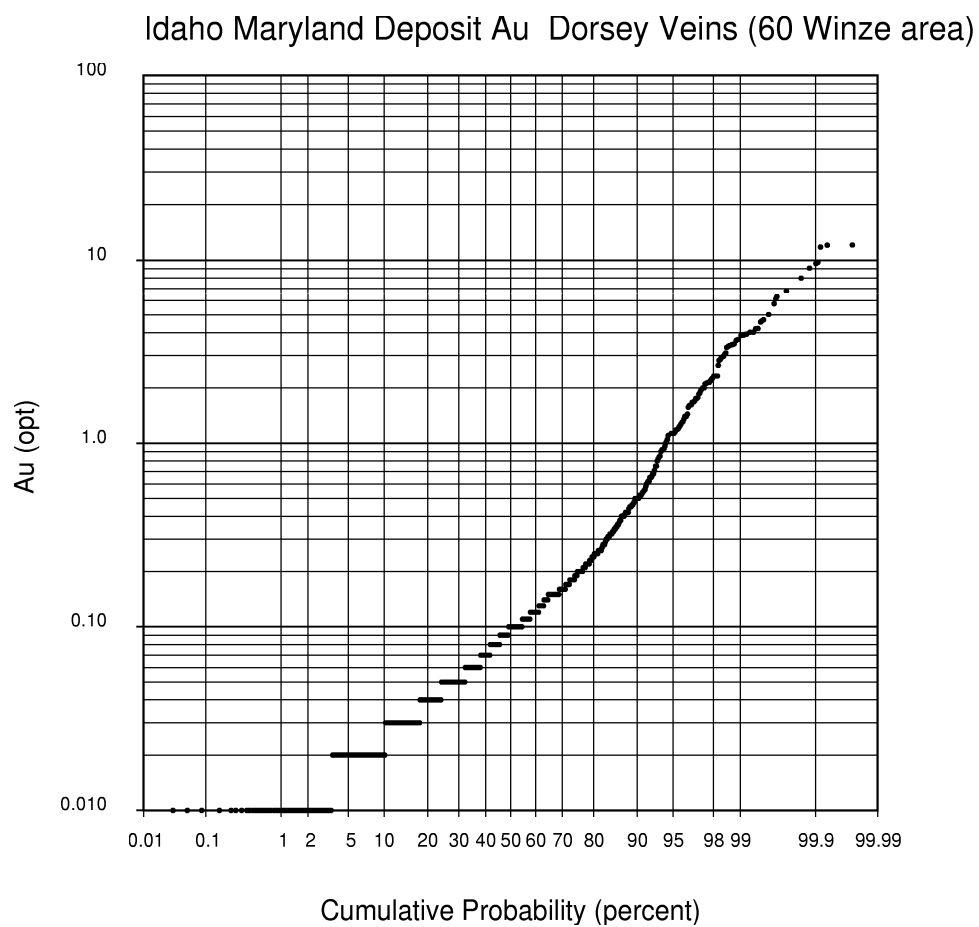
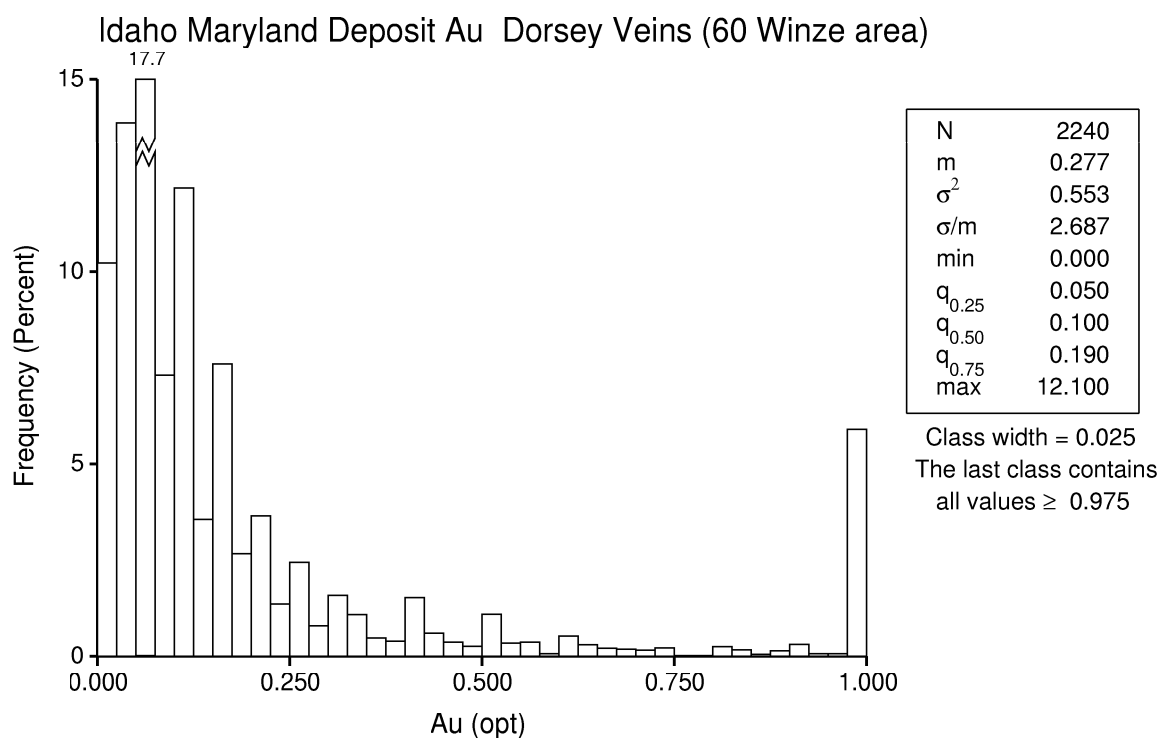
The results seem to indicate that the Idaho veins and mineralized types have a lower nugget effect than the Brunswick vein systems. Furthermore, the Idaho No.1 vein contains a distinctly higher-grade uppermost quartile and mean value, which is consistent with historical data. This vein hosted the high-grade material mined from the main Idaho No.1 stope.

Extreme grades were examined for gold values using histograms and probability plots (see Figures 17-2 to 17-5). The distributions generally indicated unique high-grade discontinuity patterns. The trends defined in the cumulative probability plots begin to become discontinuous around the 98<sup>th</sup> to 99<sup>th</sup> percentile levels. If a cap grade was to be chosen based on these results, it would vary by vein system. Past mineral resource estimates used arbitrary cap values of 1 oz/ton Au, which is too low for the Idaho-Maryland deposits. AMEC recommends that Emgold conduct a more detailed

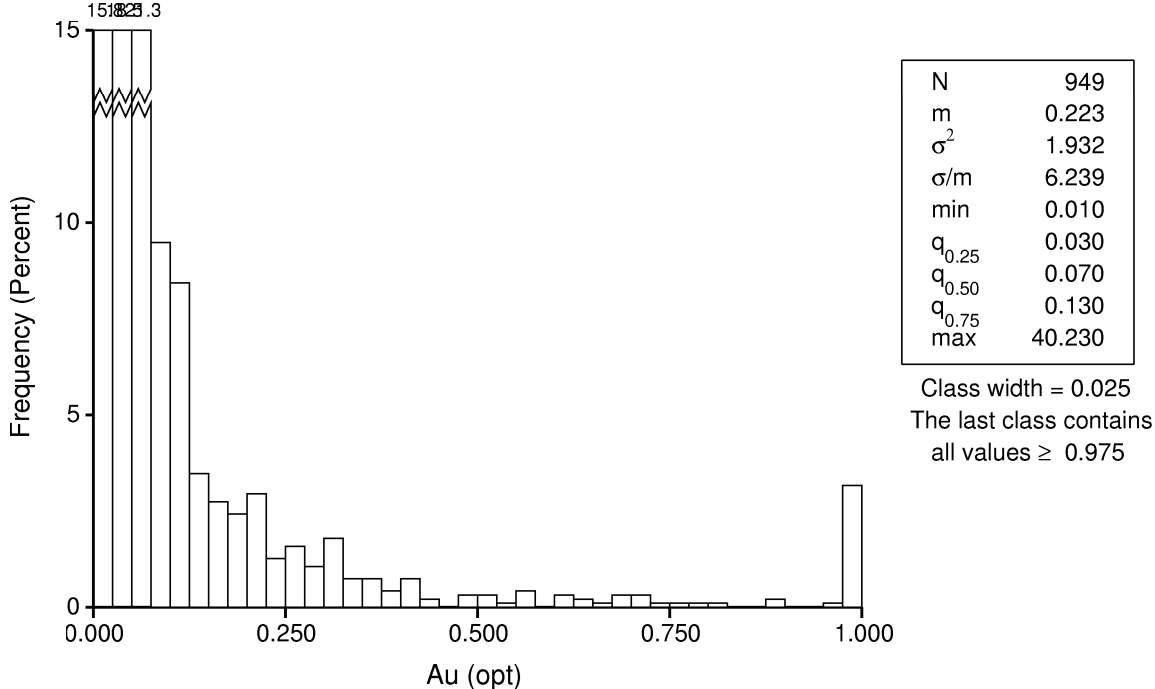




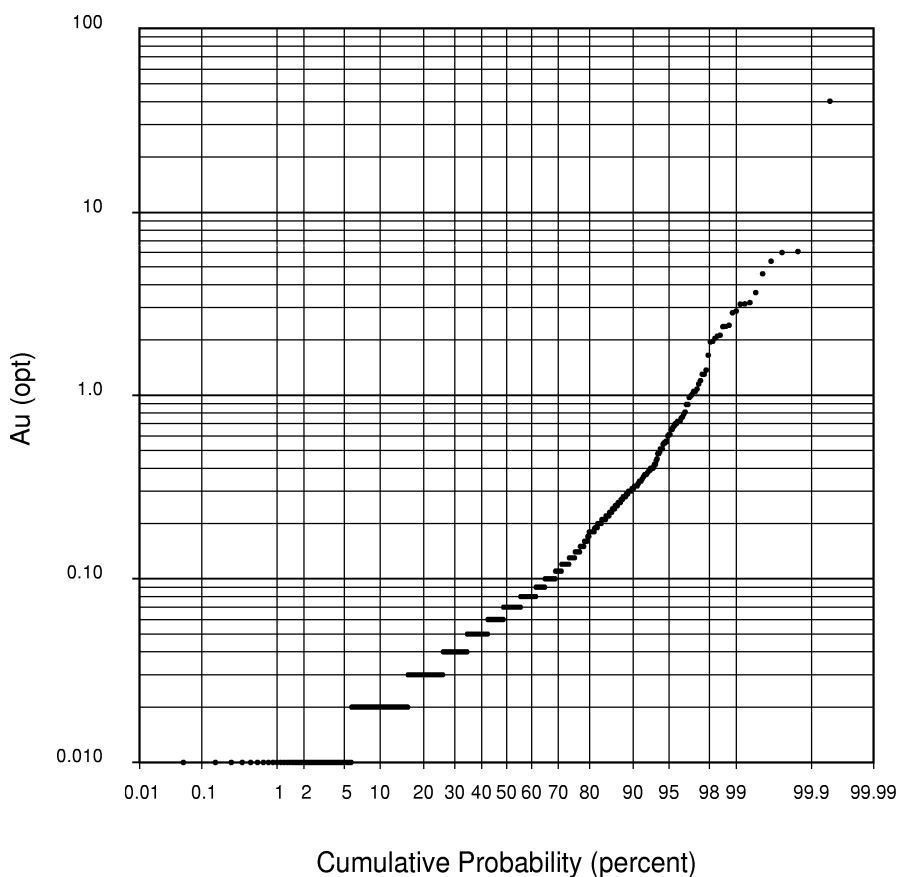




Idaho Maryland Deposit Au Brunswick Vein samples (1948)



Idaho Maryland Deposit Au Brunswick Vein samples (1948)





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statistical review of the underground data. The review, by vein system and mineralization type, would allow appropriate gold capping levels to be selected. Until such an analysis is undertaken, the resource estimates should be reported using uncapped grades. Exposure to extreme grades was evaluated by resource block and dealt with through classification.

Bulk density was assigned a tonnage factor of 12 for all stopes, resources and historic production. AMEC believes that this value is generally suitable for global usage. However AMEC believes that locally the bulk density is too low, particularly around the Brunswick veins where scheelite is a ubiquitous component and for diabase hosted mineralization in the Idaho systems. Emgold is recommended to initiate a program to obtain bulk density measurements of various lithologic types and ore types as part of any planned exploration work.

### 17.2.1 Mine Call Factor

Historically the planned mill feed tonnage and gold grade rarely matched the actual results. This was a result of a variety of factors that could be resolved by adjusting the planned production by a constant number. This number or factor is called the multiplier factor or mine call factor. Commonly, these deposit types typically under-predict the gold produced. Causes comprise poor sampling of high-grade material, inconsistent assaying procedures for the high-grade samples and, in places, the use of too low a bulk density number.

JAA conducted a detailed investigation into historic mine-mill reconciliation at the Idaho-Maryland. JAA selected data from later years (1950 to 1952), where the records of mine and mill production were kept in some detail and were traceable to parts of the mine. Two factors were calculated: a "model" (underground sampling) to "mine" (muck car sampling) factor, equal to 1.21, and a "mine" to "mill" factor, calculated to be 1.19. The total Mine Call Factor is equal to 1.44. AMEC reviewed the work done by JAA and agrees with their results. The use of the Mine Call Factor can be used to establish a relationship between the historic underground channel samples and expected production. This factor should only be used on the nuggety vein system data. The more homogeneous slate hosted mineralization should not be factored at any resource category.



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### 17.3 Resource Estimation

Estimation of grade and tonnage consisted of two processes: one based on underground samples (channel samples) and adjacent drill hole data (if present) and the other solely using drill hole data.

#### 17.3.1 Resource Blocks – Underground Samples & Adjacent Drill Holes

The process for underground sample based resource blocks included drawing the hosting vein or structure in longitudinal section, averaging the underground sample assays long the vein or structure, and calculating a true thickness for the resource block (map data and trigonometric solutions using interpreted vein or structure morphology). Underground samples commonly comprised two intervals across a vein or structure: across the vein or structure and footwall to it. These were combined into width x assay "composites" (utilizing a minimum 3 foot (0.9 m) total width), summed, and the total divided by the sum of all sample widths. This produced a weighted grade for the resource block. Low-grade zones constrained the strike extent for many of these blocks. Dip projections depended on where the remaining material lay (e.g. below the level) and were drawn honoring the interpreted geological shapes. Measurements of the shapes in longitudinal section gave the block areas, which, together with the average true thickness, determined the volumes. Mined areas were outlined from stope plans and sections, and subtracted where applicable from the resource estimate.

AMEC checked numerous underground resource blocks for compatibility with the local, interpreted vein or structural geology, correct tabulation of underground sample values, reasonable projection limits and volumetric and trigonometric calculations. The checked blocks were properly constructed and calculated.

#### ***Brunswick No. 4 & No. 16 Blocks***

These blocks comprise resources outlined in quartz stockwork areas and black slate bodies. They are characterized by widespread lower grade gold mineralization, especially the stockwork bodies. They contain numerous development headings (drifts, raises, minor crosscuts) and stoped areas. Assay data comprise underground channel samples (drifts and raises) and stope muck samples. Distribution of the gold values is more uniform than in the traditional vein systems but of lower grade and limited nugget-like values (i.e. defined as greater than 1 oz/ton Au). Grade estimation for these blocks consisted of global weighted averages.



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### 17.3.2 Resource Blocks – Drill Holes Only

Drill hole based blocks mostly consist of single intercepts defining the respective grade and thickness values. Block areas are defined by a box outline, conforming to the interpreted morphology. The size of the outline is governed by the protocol established for the resource classification and historic stope lengths. Grades are calculated by summing interval length x gold value "composites," and dividing the total by the full interval length. The interval length was then trigonometrically calculated to the vein's true width. A minimum true width equal to 3 ft (0.9 m) was used.

Blocks defined by multiple drill holes and/or samples from a nearby underground working follow a similar process for grade and thickness estimates. The area outline for these resource blocks are governed by projection within the plane of the vein or structure. Limits were set according to the classification protocol described below.

AMEC reviewed all resource blocks that were based on drill hole data because these blocks defined the majority of total tons and gold ounces at Idaho-Maryland. Grades and thicknesses were properly assigned. Outlines around drill hole intercepts were adjusted to revised distances described below. The revision adjusted the strike projection towards the intercept to prevent the over extrapolation of grade (drill hole data alone does not have the effect of low grade dilution included in similar systems using underground samples and adjacent drill holes).

### 17.4 Resource Classification

The mineral resource classification of the Idaho-Maryland deposits used logic consistent with the CIM definitions referred to National Instrument 43-101. Measured mineral resources are supported only in areas exposed by underground development and estimated from detailed underground sampling. The projection volume from a mined opening was up to  $\pm 15$  m (50 ft) along the plunge or rake direction of the mineralized zone. In the case of resource block Brunswick No. 4, the entire volume was deemed to meet the definition of measured resources because of the numerous penetrations by drifts and sub-drifts, stopes, raises and lesser crosscuts more or less uniformly throughout the mineralized body.

Indicated mineral resource category is used to classify mineralization that surrounds measured mineral resources around underground openings and around drill intercepts within resource blocks that contain multiple drill holes and evidence of the hosting vein or structure in a nearby underground working (within 200 ft / 60 m). The projection volume was up to +100 ft ( $\pm 30$  m). Also, this category included blocks that would have



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been classified as Measured mineral resources but demonstrate a degree of uncertainty in the grade estimate due to the presence of numerous plus 1 oz/ton Au assayed samples. These blocks will remain in the indicated resource category until such time that a proper investigation is carried out on setting appropriate grade capping levels at Idaho-Maryland.

The majority of the Idaho-Maryland mineral resource is classified as Inferred Mineral Resources. This includes all resources outlined by single drill hole intercepts. Here the projection was up to 100 ft (30 m) along the strike and up to 200 ft (60 m) up or down the plunge or rake. Around underground workings the projection was limited to 60 m or 200 ft from the working.

### 17.5 Resource Summary

The mineralization of the Idaho-Maryland project as of October 25, 2002, is classified as Measured, Indicated and Inferred Mineral Resources. The classified mineral resources are shown in Table 17-2. The Idaho-Maryland mineral resource was reported at a 0.10 oz/ton Au cut-off grade. All estimated resource blocks equal to or greater than 0.10 oz/ton Au were tabulated in the summary.



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**Table 17-2: Idaho-Maryland Project Mineral Resource Summary, October 25, 2002**

	True Thickness (ft)	Tonnage (tons)	Gold Grade (opt)	Gold (oz)	Gold Grade (opt) 1.44 MCF	Gold (oz) 1.44 MCF <sup>1</sup>
<i>Eureka Group</i>						
Measured Mineral Resource	6.5	17,000	0.18	3,000	0.29	5,000
Indicated Mineral Resource	5.7	41,000	0.27	11,000	0.37	15,000
<b>Measured + Indicated Mineral Resources</b>	<b>5.9</b>	<b>58,000</b>	<b>0.24</b>	<b>14,000</b>	<b>0.34</b>	<b>20,000</b>
Inferred Mineral Resources	9.5	393,000	0.21	81,000	0.30	117,000
<i>Idaho Group</i>						
Measured Mineral Resource	17.5	129,000	0.24	31,000	0.34	44,000
Indicated Mineral Resource	13.4	151,000	0.41	62,000	0.60	90,000
<b>Measured + Indicated Mineral Resources</b>	<b>15.3</b>	<b>280,000</b>	<b>0.33</b>	<b>93,000</b>	<b>0.48</b>	<b>134,000</b>
Inferred Mineral Resources	10.4	791,000	0.24	190,000	0.35	274,000
<i>Dorsey Group</i>						
Measured Mineral Resource	11.9	59,000	0.22	13,000	0.32	19,000
Indicated Mineral Resource	7.2	102,000	0.32	33,000	0.47	47,000
<b>Measured + Indicated Mineral Resources</b>	<b>8.9</b>	<b>161,000</b>	<b>0.29</b>	<b>46,000</b>	<b>0.42</b>	<b>66,000</b>
Inferred Mineral Resources	9.6	941,000	0.30	285,000	0.46	410,000
<i>Brunswick Group</i>						
Measured Mineral Resource	8.0	63,000	0.17	11,000	0.25	16,000
Indicated Mineral Resource	6.2	107,000	0.28	30,000	0.40	43,000
<b>Measured + Indicated Mineral Resources</b>	<b>6.9</b>	<b>170,000</b>	<b>0.24</b>	<b>41,000</b>	<b>0.34</b>	<b>59,000</b>
Inferred Mineral Resources	7.3	288,000	0.23	67,000	0.34	96,000
<i>Waterman Group</i>						
Measured Mineral Resource	70.7	831,000	0.15	127,000		
Indicated Mineral Resource	30.5	75,000	0.21	16,000		
<b>Measured + Indicated Mineral Resources</b>	<b>67.3</b>	<b>906,000</b>	<b>0.16</b>	<b>144,000</b>		
<i>Idaho-Maryland Project</i> <sup>2</sup>						
Measured Mineral Resource 1	13.2	268,000	0.22	58,000	0.31	84,000
Measured Mineral Resource 2	70.7	831,000	0.15	127,000	0.15	127,000
Indicated Mineral Resource	12.5	476,000	0.32	152,000	0.44	211,000
<b>Measured + Indicated Mineral Resources</b>	<b>43.3</b>	<b>1,575,000</b>	<b>0.21</b>	<b>337,000</b>	<b>0.27</b>	<b>423,000</b>
Inferred Mineral Resources	9.6	2,413,000	0.26	623,000	0.37	898,000

1. MCF = Mine Call Factor (not applicable to Waterman Group resources). 2. Idaho-Maryland measured resources are split into two categories: 1. the Eureka, Idaho, Dorsey, and Brunswick Groups, and 2. the Waterman Group (stockwork/slate type ore).





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### 18.0 OTHER RELEVANT DATA & INFORMATION

This section is not applicable to the Idaho-Maryland Mine project.



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### 19.0 REQUIREMENTS FOR TECHNICAL REPORTS ON PRODUCTION & DEVELOPMENT PROPERTIES

This section is not relevant for the Idaho-Maryland Mine project.



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### 20.0 CONCLUSIONS & RECOMMENDATIONS

AMEC reviewed pertinent geological, mining, and metallurgical data from the Idaho-Maryland project to assess its exploration potential and 2002 mineral resource estimate. The following is a list of general conclusions and recommendations made by AMEC during its review:

1. The geology of the Idaho-Maryland structurally-controlled gold mineralization is well understood. With the use of an extensive historic database, a revised, comprehensive geological model for the project area was defined. AMEC's review confirmed the proper use of this geological knowledge in defining the vein sets, estimating the mineral resources, and outlining new target areas for exploration.
2. The database to support the Idaho-Maryland mineral resource estimate contains over 36,000 gold assays, the majority of which were taken from underground samples (mostly channel samples). Those from diamond drill holes comprise only a minor portion of the assay database. The assay data reside as handwritten entries on scale assay plans (1" to 50 ft) for all mine levels. AMEC recommends that Emgold capture this assay data into electronic form (database or spreadsheet, or both) so it can be easily reproduced and/or used for comprehensive data analyses.
3. Because high nugget value deposits with coarse gold areas are best sampled with large sizes, which was not common practice at the time, any estimates made using this historic data should include comparisons with values unadjusted and adjusted for the regular underreporting of grade (i.e., call factor). AMEC believes that the comprehensive set of assay plans, supported by records of muck car stope samples and mapped geology data, as well as the detailed historical production records, all support the integrity of the assay data for the Idaho-Maryland project. These data are deemed suitable for use in mineral resource estimation. AMEC checked the transcription of data onto assay plans and mineral resource worksheets and concluded that the data are sufficiently free of error to be adequately used for resource estimation.
4. AMEC reviewed the mill operating statistics for 1934, 1936, 1937, 1938, 1941, and 1947. Results indicate stable overall gold recoveries and metallurgical response to gravity, flotation, and cyanidation. AMEC believes that the use of modern technology will result in gold recoveries that are consistent — and likely higher — than those achieved in the early milling circuits in the 1930s and 1940s. AMEC recommends that Emgold design a program of testwork to determine the maximum gold recovery potential using gravity separation and concentration.
5. Bulk density was assigned a tonnage factor of 12 for all stopes, resources, and historic production. AMEC believes that locally the bulk density is too low,



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particularly around the Brunswick veins, where scheelite is a ubiquitous component, and for diabase-hosted mineralization in the Idaho systems. It has been recommended that Emgold initiate a program to obtain bulk density measurements of various lithologic types and ore types as part of any planned exploration work.

6. AMEC conducted a reconnaissance review of the distribution of gold mineralization at Idaho-Maryland. The observed distribution on cumulative probability plots show typical lognormal trends. Each vein system does appear to have a unique grade distribution, and the higher-grade distributions (greater than 1 oz/ton (34 g/t) Au values) are an integral part of a system's population. AMEC recommends that Emgold conduct a more detailed statistical review of the gold assay data. The review, by vein system and mineralization type, would assist in future grade interpolation and in the selection of appropriate gold capping levels. Until such an analysis is undertaken, the resource estimates should be reported using uncapped grades. Exposure to extreme grades was evaluated by resource block and managed through classification protocol.
7. The 2002 mineral resource estimates were made using traditional longitudinal sections and 3-D geologic models created using commercial mine planning software (Vulcan®). AMEC validated the evidence for pertinent vein/structural interpretation data support and consistency. All examples based on the underground data demonstrated good data back-up and sound projection limits. The interpretations of the drill hole intercepts were also sound and reasonably projected. AMEC also checked numerous resource blocks for correct tabulation of sample values, reasonable projection limits, and volumetric and trigonometric calculations. The checked blocks were properly constructed and calculated.
8. Only data that could be reconciled to a geologically consistent interpretation was included in the resource estimate. About 25% of the data identified as remaining and undeveloped was excluded because it was not supported by a coherent interpretation. AMEC supports this approach as being consistent with best practice guidelines in resource estimation. Furthermore, AMEC recommends that Emgold continue to work on geological interpretations in areas hosting the excluded material.
9. The mineral resource classification of the Idaho-Maryland deposits used logic that is consistent with the CIM definitions referred to *National Instrument 43-101*. The mineral resources were classified into measured, indicated and inferred resource categories. AMEC assessed the criteria used by Emgold for this classification and generally agreed with them. Emgold's classification protocol was amended to classify mineral resources outlined by single drill hole intercepts as inferred mineral resources and to downgrade any resource blocks that demonstrate a degree of uncertainty in the grade estimate due to the presence of numerous +1 oz/ton Au



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assayed samples (mostly originally measured mineral resources downgraded to indicated mineral resources). In the case of the latter condition, those blocks will remain in the downgraded resource category until such time that a proper investigation is carried out on setting appropriate grade capping levels at Idaho-Maryland.

10. The revised geologic model for the Idaho-Maryland site should be tested for new areas of mineralization. AMEC strongly recommends that Emgold test their deposit model by a surface-based diamond drill program on three to six priority targets in and around the Idaho Structural Corridor. Each target will require several drill holes, approximately 600 ft (200 m) to 1,400 ft (425 m) in length. Eventually the exploration work will need to continue from underground stations. Plans for this phase are currently being evaluated in a preliminary assessment study. Best areas for relatively shallow, higher-grade gold mineralization occur around the Idaho shaft, in and around the Idaho Structural Corridor. Access for drilling would be from an exploration decline. AMEC supports this exploration concept and planning efforts.
11. Emgold is in the process of modifying its plans to exploit and develop the Idaho-Maryland property. New permit applications and documents will have to be prepared. Two aspects that will need to be addressed in the permitting process are: 1) requirements for a surface-based exploratory phase to confirm the near-surface mineral resources, and 2) requirements for developing the mineral resources. The exploratory phase may be exempt from certain regulatory requirements required for the full-scale development of mineral resources. Such an alternative may allow surface-based exploration activities to proceed while work is in progress to permit the mining operations within six months of project initiation. Together, these processes indicate a schedule of between 12 and 24 months to meet the necessary environmental and permit requirements.
12. Permitting strategy will entail working closely with the County and City as they may be the Lead Agency for the exploratory and full mineral resource developments, respectively, and are stakeholders in both CEQA processes. As cooperating agencies, they have the authority to run the permit processes simultaneously or sequentially. Because of the importance of developing a coordinated, collaborative, and informed CEQA process with project stakeholders, as well as government and public arenas, it has been recommended that Emgold develop an outreach strategy to encourage public support and feedback on draft project and operational mine plans. Such a program may take between three to six months to plan and complete.

This independent review by AMEC supports the 2002 Idaho-Maryland project mineral resource estimate and its positive exploration potential for additional gold mineralization.



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### 21.0 REFERENCES

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# EMGOLD MINING CORPORATION

## TECHNICAL REPORT

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# EMGOLD MINING CORPORATION

## TECHNICAL REPORT

### APPENDIX A QUIT CLAIM DEED SUMMARIES

3580

## QUIT CLAIM DEED

IDAHO MARYLAND INDUSTRIES INC., a corporation

quit claim unto

WILLIAM GHIDOTTI and MARIAN GHIDOTTI, his wife as tenants in common,  
all that real property situate in the County of Nevada

State of California, described as follows:

See Exhibit "A" attached.

3580

VOL 357 PAGE 175  
OFFICIAL RECORDS  
RECORDED AT REQUEST OF  
INTER-COUNTY TITLE CO.

JUN 12 1963  
AT 11 MIN. PAST 2 O'CLOCK A.M.  
NEVADA COUNTY, CALIFORNIA  
FEE: 18 50  
This is a full and complete  
RECORDED

Dated June 10, 1963

STATE OF CALIFORNIA

IDAHO MARYLAND INDUSTRIES INC.,

County of } ss.  
On \_\_\_\_\_ 19\_\_\_\_  
before me, \_\_\_\_\_, a Notary Public  
in and for said County and State, personally appeared

By \_\_\_\_\_  
President

STATE OF CALIFORNIA,

County of Nevada } ss.  
On this 12th day of June in the year one thousand nine hundred and sixty-three  
before me, Thelma A. Jackson, a Notary Public in and for the County of  
Nevada, State of California, duly commissioned and sworn, personally appeared

G. J. Morton

President

known to me to be the \_\_\_\_\_  
of the corporation described in and that executed the within instrument, and also known to me to be  
the person who executed the within instrument on behalf of the corporation therein named, and  
acknowledged to me that such corporation executed the same \_\_\_\_\_

SEAL

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal in the  
County of Nevada the day and year in this certificate  
first above written.

Notary Public in and for the County of Nevada  
THELMA A. JACKSON State of California

**EXHIBIT "A"**  
**DESCRIPTION**

All that real property situate in the County of Nevada, State of California, described as follows:

**PARCEL No. 1:** ALL MINERALS, GAS, OIL AND MINERAL DEPOSITS OF EVERY KIND AND NATURE LOCATED BELOW A DEPTH OF 200 FEET 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 FOREGOING EXCEPTION AND RESERVATION SHALL NOT INCLUDE ANY RIGHT OF ENTRY UPON THE SURFACE OF SAID LAND WITHOUT THE CONSENT OF THE OWNER OF SUCH SURFACE OF SAID LAND as excepted in the deed dated June 15, 1959, recorded June 22, 1959, in Book "263" of Official Records, Nevada County Records, at page 381, executed by Idaho Maryland Mines Corporation, a Nevada Corporation to William G. Gilmore, such real property being all those portions of the following sub-parcels lying within the exterior boundaries of the land described in the instrument above referred; AND, ONLY MINERALS, GAS, OIL AND MINERAL DEPOSITS BELOW A DEPTH OF 200 FEET BENEATH SUCH SURFACE; TOGETHER WITH ALL NECESSARY AND CONVENIENT RIGHTS TO EXPLORE FOR, DEVELOP, PRODUCE, EXTRACT AND TAKE THE SAME, SUBJECT TO THE EXPRESS LIMITATION THAT THE FOREGOING EXCEPTION AND RESERVATION SHALL NOT INCLUDE ANY RIGHT OF ENTRY UPON THE SURFACE OF SAID LAND WITHOUT THE CONSENT OF THE OWNER OF SUCH SURFACE OF SAID LAND as excepted in the deed dated August 3, 1959, recorded August 12, 1959, in Book "266" of Official Records, Nevada County Records, page 195, executed by Idaho Maryland Mines Corporation, a Nevada corporation, to Oliver Investment Company, a Nevada Corporation, the real property being the remainder of those portions of the following sub-parcels lying outside the exterior boundaries of the land described in the first instrument above referenced; said sub-parcels being more particularly described as follows:

**Sub-Parcel No. 1:** The J. M. English Quartz Mine designated by the United States Surveyor General as Lot No. 54, embracing a portion of the Southeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

**Sub-Parcel No. 2:** The Lucky or Agnes Quartz Mine, designated by the United States Surveyor General as Lot No. 129, embracing a portion of Sections 25 and 36, Township 16 North, Range 8 East, M.D.B.&M.

**Sub-Parcel No. 3:** The Union Hill Quartz Mine designated by United States Surveyor General as Lot No. 52, embracing a portion of Sections 25 and 36, Township 16 North, Range 8 East, M.D.B.&M.

**Sub-Parcel No. 4:** The Centennial Quartz Lode Mining Claim, designated by the United States Survey General as Lot No. 106, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

**Sub-Parcel No. 5:** The Elphene Quartz Lode Mining Claim, designated by United States Surveyor General as Lot No. 202, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

(Continued on Page 2 - Description)

Sub-Parcel No. 6: The "Dorothy D" Lode Mining Claim, designated by the United States Surveyor General as Survey No. 5628, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 7: The Morning Dew Quartz Lode Mining Claim, designated by the United States Surveyor General as Lot No. 130 embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 8: The Howard Hill Lode Mining Claim, designated by the United States Surveyor General as Survey No. 4613 embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 9: A portion of the Hoxie Placer Mining Claim, described as the Lot No. 6 of the Southeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 10: The Cambridge Quartz Mine, designated by the United States Surveyor General as Lot No. 128 embracing a portion of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 11: Gold Blossom Quartz Mine, designated by the United States Surveyor General as Lot No. 3697, embracing a portion of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 12: Lots 1, 2, 3, 4 and 5 of the Northeast quarter of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 13: Fractional West half of the Northeast quarter of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

EXCEPTING THEREFROM that portion thereof lying within the exterior boundaries of Gold Blossom Quartz Mine Lot 3697, patented.

Sub-Parcel No. 14: The Northwest one-quarter (NW $\frac{1}{4}$ ) of Section 31, Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 15: The Southwest one-quarter (SW $\frac{1}{4}$ ) of Section 31, Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 16: Eureka Gold Mining Co's Claim, being Lot 41, located in Section 26, Township 16 North, Range 8 East, M.D.B.&M., more particularly described at length in Letters Patent issued September 13, 1869, by the United States of America, and recorded September 30, 1869, in Book "34" of Deeds, Nevada County Records, page 323.

Sub-Parcel No. 17: Tracy Quartz Lode Mining Claim being Lot 193, located in Section 25, Township 16 North, Range 8 East, M.D.B.&M., designated in Survey #2985 by the Surveyor General and more particularly described at length in Letters Patent issued January 20, 1902, by the United States of America, recorded September 7, 1910, in Book "4" of Patents, Nevada County Records, page 434.

(Continued on Page 3 - Description)

Sub-Parcel No. 18: Independence Quartz Lode Mining Claim, being Lot 120, located in Section 25, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #2210 by the Surveyor General, and more particularly described at length in Letters Patent issued April 4, 1889, by the United States of America, and recorded May 4, 1889, in Book "2" of Patents, Nevada County Records, at page 520.

Sub-Parcel No. 19: Alpha Quartz Lode Mining Claim, being Lot 66, located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #711, by the Surveyor General and more particularly described at length in Letters Patent issued April 9, 1892, by the United States of America, and recorded June 12, 1894, in Book "3" of Patents, Nevada County Records, at page 267.

Sub-Parcel No. 20: Black Hawk Extension Lode Mining Claim designated by the Surveyor General as Lot 4213 located in Section 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., more particularly described at length in Letters Patent, issued June 30, 1905 by the United States of America, and recorded May 1, 1916, in Book "4" of Patents, Nevada County Records, at page 577.

Sub-Parcel No. 21: Those certain Quartz Mines known as the A.B.C. and O.K. mines being Lots Nos. 167 and 168 respectively embracing a portion of Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., as designated on the official plat by the United States Surveyor General, and more particularly described at length in the U.S. Patent dated May 5, 1897, and recorded May 6, 1916, in Book "4" of Patents, Nevada County, at page 579.

EXCEPTING THEREFROM all that portion thereof embraced in Lot 7 of the Southeast quarter of the Northeast quarter of said Section 26.

Sub-Parcel No. 22: That certain mine known as the Gamblers Gold and Silver Lode Mine being Lot (Survey) No. 4217, embracing a portion of Section 26, Township 16 North, Range 8 East, M.D.B.&M., as designated on the official plat by the United States Surveyor General, and more particularly described at length in the U.S. Patent dated March 18, 1907, recorded June 6, 1916, in Book "4" of Patents, Nevada County, at page 584.

Sub-Parcel No. 23: The South half of the Southeast quarter; the Northwest quarter of the Southeast quarter; the South half of the Southwest quarter; and the Northeast quarter of the Southwest quarter, all in Section 24, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 24: The North half of the Northeast quarter; the Northeast quarter of the Northwest quarter; and Lot 1 of the Northwest quarter of the Northwest quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

EXCEPTING THEREFROM all that portion of Lot 1 of the Northwest quarter of the Northwest quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M., lying South of the South rail of the Nevada County Narrow Gauge Railway Company track.

(Continued on Page 4 - Description)

Sub-Parcel No. 25: That certain Quartz Mine known as the Kentucky Quartz Mine, being Lot 133, embracing a portion of Section 25 & 26, Township 16 North, Range 8 East, M.D.B.M., designated on the Official plat by the United States Surveyor General, and more particularly described at length in the U.S. Patent dated March 13, 1890, recorded July 8, 1896, in Book "3" of Patents, Nevada County, at page 507.

Sub-Parcel No. 26: Idaho No. 1, Idaho No. 2, Idaho No. 3, Idaho No. 5, Idaho No. 6, Idaho No. 7, Idaho No. 11, Idaho No. 12, Maryland #22, Maryland #23, Maryland #24, Maryland Fraction, Extension Lode Mining Claims, Gold Point Fraction, and Gold Point Surveyor General for the State of California, as Survey No. 5514 embracing a portion of Sections twenty-five and twenty-six, in Township Sixteen North of Range Eight East of the Mount Diablo Meridian, and more particularly described at length in the Patent issued by United States of America to Idaho Maryland Mines Co., dated January 17, 1923, recorded in the Office of the County Recorder of Nevada County on January 31, 1923, in Book "6" of Patents, at page 149.

Sub-Parcel No. 27: (a) The Southwest quarter of the Northeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.M.  
(b) The Southeast quarter of the Northeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.M.

Sub-Parcel No. 28: Baby Lode Claim and Pinafore Lode Claim, located in the South half of Section 25, Township 16 North, Range 8 East, designated as Survey #1216 by the Surveyor General and more particularly described in Letters Patent issued by the United States of America, October 11, 1909, and recorded May 19, 1916, in Book "4" of Patents, Nevada County Records, page 582.

Sub-Parcel No. 29: Maryland Consolidated Quartz Mining Claim comprising the Maryland and Maryland Extension Location Lodes and Maryland Extension Mill Site Claims, being Lots 144, 145 and 146, respectively, located in the South half of Section 25, Township 16 North, Range 8 East, designated as Survey #2535 by the Surveyor General and more particularly described in Letters Patent issued by the United States of America March 17, 1903, and recorded February 2, 1903, in Book "4" of Patents, Nevada County Records, at page 144.

Sub-Parcel No. 30: Maryland Extension Quartz Mine Lode, located in the northeast quarter of the Southeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.M., designated as Survey #3679, by the Surveyor General, and more particularly described in Letters Patent issued by the United States of America, April 1, 1904, and recorded June 5, 1918, in Book "6" of Patents, Nevada County Records, at page 21.

Sub-Parcel No. 31: Gold Point Consolidated Gold and Silver Mining Company's Lode Mining Claim, being Lot 107, located in the South half of Section 25, Township 16 North, Range 8 East, designated as Survey #1892, by the Surveyor General, and more particularly described in Letters Patent issued by the United States of America, October 23, 1896, and recorded April 7, 1926 in Book "2" of Patents, Nevada County Records, at page 421.  
(Continued on Page 5 - Description)

Sub-Parcel No. 32: Idaho Millsite Claim, being Lot #138 located in the Northeast quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #2509 by the Surveyor General and more particularly described at length in Letters Patent issued June 18, 1896, by United States of America, and recorded February 2, 1903, in Book "4" of Patents, Nevada County Records, at page 141.

Sub-Parcel No. 33: East Eureka Lode Mining Claim, located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #5515 by the Surveyor General and more particularly described at length in Letters Patent issued September 25, 1922, by United States of America and recorded September 28, 1923, in Book "6" of Patents, Nevada County Records, at page 169.

Sub-Parcel No. 34: Idaho Mining Company's Claim being Lot 38 located in the East half of the Northeast quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #24 by the Surveyor General and more particularly described at length in Letters Patent issued December 4, 1869 by United States of America, recorded December 20, 1869, in Book "35" of Deeds, Nevada County Records, at page 26.

Sub-Parcel No. 35: Lot 13, in Section 25, Township 16 North, Range 8 East, as described in Letters Patent issued December 9, 1896, by United States of America and recorded February 10, 1897, in Book "3" of Patents, Nevada County Records, at page 585.

Sub-Parcel No. 36: Grant Quartz Mine Claim, being Lot 62, located in Sections 25 and 26, Township 16 North, Range 8 East, designated as Survey #634 by the Surveyor General, and more particularly described at length in Letters Patent issued August 1, 1878, by United States of America and recorded August 23, 1878, in Book "1" of Patents, Nevada County Records, at page 484.

Sub-Parcel No. 37: That portion of the Moxie Placer Mining Claim, lying within Lot 5 of the Southeast quarter of Section 25, Township 16 North, Range 8 East, as described in Letters Patent issued June 20, 1904, by United States of America and recorded August 13, 1910, in Book "4" of Patents, Nevada County Records, at page 433.

Sub-Parcel No. 38: Roannaise Lode, being Lot 116, located in Section 23 and 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey No. 2083, by the Surveyor General, and more particularly described at length in Patent issued October 15, 1884, recorded November 17, 1884, in Book "2" of Patents, Nevada County Records, at page 113.

Sub-Parcel No. 39: Schofield Lode, being Lot 37, located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., as designated by the Surveyor General, and more particularly described at length in Patent issued October 10, 1868, and recorded December 23, 1868, in Book "32" of Deeds, Nevada County Records, at page 422.

(Continued on Page 6 - Description)

Sub-parcel No. 40: Morehouse Quartz Mine, Vein, Lode, Ledge, or Deposit, being Lot 53, located in Section 26, Township 16 North, Range 8 East, M.D.B.&M., as designated by the Surveyor General, and more particularly described at length in Patent issued April 4, 1873, and recorded May 22, 1873, in Book "1" of Patents, Nevada County Records, page 9.

Sub-Parcel No. 41: The Lot Numbered Three (3) of the Northeast one-quarter and the Lot Numbered Seventeen (17) of the Northwest one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., containing 39.49 acres, according to the amended plat of said Section 26 filed in the United States Land Office at Sacramento, California, August 7, 1886.

Sub-Parcel No. 42: The Lots Numbered 5 and 7 of the Northeast one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M.,

Sub-Parcel No. 43: All that portion of Lot Numbered 9 of the Northeast one-quarter of the Southwest one-quarter and a portion of the Northwest one-quarter of the Southeast one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., lying on the North side of the Nevada County Narrow Gauge Railroad Company's railroad track.

Sub-Parcel No. 44: Beginning at Station 837+10 on the located center line of the Nevada County Narrow Gauge Railroad, thence following along said center line of said railroad to Station 850+50, and taking a strip of land 40 feet wide on each side of said center line of said railroad the above being in the Northwest one-quarter of the Southeast one-quarter of Section 26, Township 16 North, Range 8 East; thence from said Station 850+50 and following along said center line of said railroad to Station 864+10 and taking a strip of land 40 feet wide on each side of said center line of said railroad; the above being in the Northeast one-quarter of the Southwest one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 45: The Southeast one-quarter of the Northwest one-quarter of Section 25, in Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 46: Lot 3 of the Northwest quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 47: The Southeast quarter of the Southeast quarter of the Northeast quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 48: Lot 1 of the Northwest quarter of Section 30 in Township 16 North, Range 9 East, M.D.B.&M., and the Northeast quarter of the Northwest quarter of Section 30, and the North half of the Northeast quarter of Section 30, in Township 16 North, Range 9 East, M.D.B.&M.



Sub-Parcel No. 49: The Southeast quarter of the Southwest quarter, and Lot 4 of the Southwest quarter of Section 19, in Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 50: Lot 2 of the Northwest quarter and the Southeast quarter of the Northwest quarter, Lots 3 and 4 of the Southwest quarter, the Northeast quarter of the Southwest quarter, and the West half of the Southeast quarter of the Southwest quarter; the North half of the Southeast quarter; and the South half of the Northeast quarter, all in Section 30, Township Sixteen (16) North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 51: Reservoir Site as reserved in the deed dated September 15, 1949, recorded September 19, 1949, Filing No. 3695, described as follows, to-wit: Commencing at Corner No. 1 from which the Southwest corner of Section 30, Township 16 North, Range 9 East, M.D.B.&M., bears South 49° 44' 20" West 948.74 feet distant; thence from said Corner No. 1, with true bearings, North 52° 09' West 165.61 feet to Corner No. 2; thence North 39° 36' 49" East 136.64 feet to Corner No. 3; thence South 52° 09' East 105.61 feet center of ditch, 165.61 feet to Corner No. 4; thence South 39° 36' 49" West 136.64 feet to Corner No. 1, the place of beginning.

Sub-Parcel No. 52: A portion of Survey No. 283 or Lot No. 46, Biggs Placer, described as follows, to-wit: Commencing at the corner designated in the patent as a post in the center of the Southwest quarter of Section 36, Township 16 North, Range 8 East, M.D.M., thence along an East line of said Biggs Placer, South 660.00 feet; thence leaving said East line, West 660.00 feet; thence North parallel to said East line, 660.00 feet to a point on the Northerly line of said Biggs Placer; thence along said Northerly line, East 660.00 feet to the place of beginning.

Sub-Parcel No. 53: The Champion Lode Mining Claim, designated by the Surveyor General as Survey No. 4826, embracing a portion of Section 1, in Township 15 North, Range 8 East, M.D.P.&M., and Section 35, in Township 16 North, Range 8 East, M.D.B.&M., as described in the Patent from the United States of America to Benjamin F. Berriman, dated November 15, 1912, recorded December 4, 1912, in Book "4" of Patents, at page 497.

EXCEPTING THEREFROM all that certain portion of said Champion Lode Mining Claim lying in Section 1, Township 15 North, Range 8 East, M.D.M.

Sub-Parcel No. 54: The Josephine Lode Mining Claim, being a portion of Mineral Survey No. 4638, located in Section 1, Township 15 North, Range 8 East, M.D.M., and in Section 35, Township 16 North, Range 8 East, M.D.B.&M.

EXCEPTING THEREFROM all that certain portion of said Josephine Lode Mining Claim lying in Section 1, Township 15 North, Range 8 East, M.D.M.

Sub-Parcel No. 55: An undivided 3/10 th interest in and to The Christopher Columbus Consolidated Quartz Mining Claim designated by the Surveyor General as Lots 224 and 225, Survey No. 3399,

(Continued on Page 8 - Description)

embracing a portion of Sections 25 and 26, Township 16 North, Range 8 East, M.D.M., containing in the aggregate 21.59 acres, more or less, as described in the Patent dated February 1, 1899, recorded August 11, 1912, in Book "80" of Official Records, at page 23, Nevada County Records.

EXCEPTING FROM the above described sub-parcels those certain portions thereof lying within the exterior boundaries of the lands hereafter described:

HOWEVER VESTING IN THE NAME OF THE VESTEE HEREIN THE MINERALS or SUB-SURFACE underlying such portions as are set forth in the following:

- (1) As to Sub-parcels 1, 6, 8, 18, 37: As Parcel No. 2 in the deed dated July 22, 1954, recorded July 30, 1954, in Book "199" of Official Records, at page 10, Nevada County Records, File No. 9135, executed by Idaho Maryland Mines Corporation, a Nevada Corporation, to John J. Looser a widower, which deed excepted and reserved all the mineral, metal matter and rock contained under said premises, with the right to extract at any time hereafter all the mineral, metal matter and rock contained under said property from any depth up to and within 75 feet of the surface of said property, without disturbing the surface thereof.
- (2) As to Sub-parcels 1, 6, 9: The deed dated July 9, 1955, recorded July 15, 1955, in Book "211" of Official Records, at page 11, Nevada County Records, File No. 2934, executed by Idaho Maryland Mines Corporation to Roy L. Dodge et ux, which deed conveyed the surface to a depth of 75 feet.
- (3) As to Sub-parcels 1, 6, 9, 11, 15, 18, 26 (Idaho 22 and Maryland Extension Fraction), 27a, 28: As Parcel No. 1 in the deed dated October 21, 1955, recorded November 4, 1955, in Book "214" of Official Records, at page 431, Nevada County Records, File No. 4722, executed by Idaho Maryland Mines Corporation to County of Nevada, which deed excepted and reserved the perpetual right and ownership, together with the right to mine for, extract and take minerals from beneath the surface of, and the sub-surface of that portion of the property lying more than 50 feet beneath the surface thereof.
- (4) As to Sub-parcels 1, 6, 9, 12: In the Deed dated December 4, 1956, recorded December 10, 1956, in Book "227" of Official Records, at page 290, Nevada County Records, File No. 4996, executed by Idaho Maryland Mines Corporation, to Malcolm E. Hamill et ux, which deed conveyed the surface to a depth of 75 feet.
- (5) As to Sub-parcels 3, 5, 12: The deed dated August 31, 1956, recorded September 5, 1956, in Book "224" of Official Records, at page 286, Nevada County Records, File No. 3700, executed by Idaho Maryland Mines Corporation to Vivian Normile et vire, which deed conveyed the surface to a depth of 75 feet.

(Continued on Page 9 - Description)

- (6) As to Sub-parcel 14: Beginning at the one-quarter section corner on the North boundary of said Section 31, Township 16 North, Range 9 East, N.D.M., and thence running South  $1^{\circ} 10'$  East along the center line of Section 31, 1742.4 feet to the Southeast corner of the tract hereby reserved; thence South  $87^{\circ} 29'$  West 1000 feet to the Southwest corner of this tract; thence North  $1^{\circ} 10'$  West 1742.4 feet to the Northwest corner of this tract on the line between Sections 30 and 31, said Township and Range; thence following said line Easterly, North  $87^{\circ} 29'$  East 1000 feet to the place of beginning, from which all the quartz and mineral therein beneath the surface and all rights for tunnels, drifts and underground working, necessary or proper to work all quartz ledges beneath the surface, not to interfere with the use thereof for agriculture purposes.
- (7) As to Sub-parcel 14: The deed dated December 3, 1956, recorded December 19, 1956, in Book "227" of Official Records, at page 292, Nevada County Records, file No. 4997, executed by Idaho Maryland Mines Corporation to Milton Balmain, which deed conveyed the surface and sub-surface to a depth of 75 feet below the surface.
- (8) As to Sub-parcel 15: The deed dated March 26, 1946, recorded April 12, 1946, in Book "105" of Official Records, at page 178, Nevada County Records, file No. 1914, executed by Idaho Maryland Mines Corporation to Nevada Irrigation District. (Any mineral or sub-surface thereunder not vesting in the vestee herein)
- (9) As to Sub-parcels 15, 50: As Parcel 4 (2), the deed dated September 15, 1949, recorded September 19, 1949, in Book "110" of Official Records, at page 427, Nevada County Records, file No. 3695, executed by Idaho Maryland Mines Corporation to Errol McBoyle, which deed conveyed the surface rights to a depth of 75 feet in and on and to that certain real property.
- (10) As to Sub-parcel 15: The deed dated April 16, 1956, recorded April 17, 1956, in Book "219" of Official Records, at page 547, Nevada County Records, file No. 1414, executed by Idaho Maryland Mines Corporation to John Grimes et ux, which deed conveyed the surface to a depth of 75 feet.
- (11) As to Sub-parcel 15: The deed dated November 7, 1956, recorded November 13, 1956, in Book "226" of Official Records, at page 300, Nevada County Records, file No. 4605, executed by Idaho Maryland Mines Corporation to John Grimes et ux, which deed conveyed the surface to a depth of 75 feet.

- (12) As to Sub-parcels 19, 23, 24, 25: The deed dated October 22, 1948, recorded October 23, 1948, in Book "136" of Official Records, at page 17, File No. 4201 Nevada County Records, executed by Idaho Maryland Mines Corporation to Errol MacBoyle, which deed conveyed the surface rights to a depth of 75 feet.
- (13) As to Sub-parcels 16, 38, 41, 42 (As to lot 5): The deed dated July 8, 1955, recorded July 11, 1955, in Book "209" of Official Records, at page 594, File No. 2896, Nevada County Records, executed by Idaho Maryland Mines Corporation to Walter V. Canon and Ida F. Canon, his mother, which deed conveyed the surface to a depth of 75 feet.
- (14) As to Sub-parcels 17, 21, ntn. 26 (Idaho 1, 2 & 6), 28: The Quitclaim deed dated February 7, 1957, recorded October 22, 1957, in Book "238" of Official Records, at page 207, File No. 4780, Nevada County Records, executed by Idaho Maryland Mines Corporation, to Gladys M. Perkins, a widow, and Edwin H. Bruning and Wenona E. Bruning, his wife, which deed quitclaimed to said grantees "the identical premises described as Parcel 7 in the Deed dated February 7, 1945, April 7, 1945, recorded in Book "94" of Official Records, at page 360, File No. 825, Nevada County Records. (Any mineral or subsurface thereunder not vesting in the vestee herein).
- (15) As to Sub-parcels 20, 21, 22, ntn. 26 (Idaho Nos 1, 2, 3, 7, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100): As Parcel No. 1 in the deed dated October 17, 1957, recorded October 22, 1957, in Book "238" of Official Records, page 209, executed by Idaho Maryland Mines Corporation to Gladys M. Perkins, a widow, and Edwin H. Bruning and Wenona E. Bruning, his wife, which deed excepted and reserved all minerals, metal matter and ores lying and being more than 100 feet from the surface of the above described property, together with the right to mine and extract the same without disturbing the surface of the said premises.
- FULLY EXCEPTING, HOWEVER, the portions described as follows: (a) That portion of the U.S. Grant Lode lying within the exterior boundaries of the Idaho No. 2 particularly described as follows: Beginning at the Northwest corner of Survey No. 4217, the U.S. Grant Lode; thence along said Northerly line of the U.S. Grant Lode, South 86° 00' East 110.44 feet; thence leaving said Northerly line South 49° 17' West 140.03 feet to the Westerly line of said U.S. Grant Lode; thence along said Westerly line North 2° 20' West 99.13 feet to the point of beginning.
- (b) That portion of the U.S. Grant Lode lying within the exterior boundaries of the Idaho No. 2 & Idaho #7 particularly described as follows: Beginning at the Northwest corner of the lot herein described at the intersection of the North line of survey No. 4217, U.S. Grant Lode and the fence at the Easterly side of the Grass Valley-Colfax road, at South 86° East 110.44 feet from the Northwest corner of the U.S. Grant Lode;

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thence along said North line of the U.S. Grant lode South 86° 00' East 353.70 feet to intersection with the fence line at the Easterly side of the O'Keeffe enclosure and the West side of the N.C.M.F.M. thence along said fence South 25° 54' East 69.27 feet to fence angle; thence South 14° 56' East 73.96 feet to fence angle; thence South 2° 39' East 120.73 feet to fence corner at the Southeast corner of the O'Keeffe enclosure; thence South 79° 23' West 121.99 feet to fence corner at the East side of the Grass Valley-Colfax Road; thence North 70° 55' West 36.73 feet to fence corner at the West side of the Grass Valley-Colfax Road and the Southeast corner of that portion of the O'Keeffe enclosure on the West side of the road; thence along fence South 87° 26' West 79.86 feet, intersecting the section line between sections 25 and 26, at North 3° 16' West 317.78 feet from the <sup>11</sup>/<sub>11</sub> section corner 206.92 feet to fence angle; thence North 86° 38' West 143.69 feet, intersecting the West line of the U.S. Grant lode; thence along the West line of the U.S. Grant; North 2° 20' West 199.69 feet intersecting the fence line on the Southeast side of the Grass Valley-Colfax Road; thence along said fence North 49° 17' East 140.03 feet to the place of beginning.

- (16) As to Sub-parcels 22, etc. 26 (Idaho Map. 2,6,7):  
The Deed dated January 7, 1954, recorded January 13, 1954, in Book \_\_\_\_\_ of Official Records, page \_\_\_\_\_, Filing No. 6304, Nevada County Records, executed by Idaho Maryland Mines Corporation to Vern B. Perkins and Gladys E. Perkins, husband and wife. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (17) As to Sub-parcel 23: The Quitclaim deed dated October 25, 1954, recorded October 26, 1954, in Book "201" of Official Records, at page 314, Filing No. 11657, Nevada County Records, executed by Idaho Maryland Mines Company, a corporation, to Glenn H. Jones et ux, which deed conveyed the surface rights to a depth of 75 feet.
- (18) As to Sub-parcel 23: The deed dated October 23, 1954, recorded November 1, 1954, in Book "201" of Official Records, at page 354, Filing No. 11727, Nevada County Records, executed by Idaho Maryland Mines Corporation, to Nevada County Horsemen, Inc., which deed excepted all the mineral, ore and metal under said property, with the right to extract the same from any depth up to 75 feet of the surface of said property, without disturbing the surface thereof.
- (19) As to Sub-parcel 23: The Correctory Deed dated July 11, 1955, recorded July 28, 1955, in Book "211" of Official Records, at page 153, Filing No. 3137, Nevada County Records, executed by Idaho Maryland Mines Corporation, to George E. Maurer, which deed conveyed the surface to a depth of 75 feet.

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- (20) As to Sub-parcels 24, 25: The Deed dated June 26, 1957, recorded August 11, 1957, in Book "235" of Official Records, at page 327, Filing No. 1360, Nevada County Records, executed by Idaho Maryland Mines, a corporation, to John B. Gwin et ux, which deed conveyed the surface and the subsurface to a depth of 75 feet below the surface.
- (21) As to Sub-parcel, etc. 26: Portions of Idaho No. 1, Idaho No. 2 and Idaho No. 6 Lode Mining Claims, as said claims are particularly described in the patent issued by the United States of America to Idaho Maryland Mines Co., dated January 17, 1923, recorded January 21, 1923, in Book "6" of Patents, page 149, Nevada County Records, said portions being described as follows, to-wit: A portion of Section 25, Township 16 North, Range 8 East, E.D.M., Nevada County, California: Commencing at the quarter quarter section corner on the North and South section line on the West side of Section 25, Township 16 North, Range 8 East, lying half way between the section corner common to Sections 25, 26, 35 and 36 and the quarter section corner on the North and South section line between said Sections 25 and 26, said Township and Range, and running thence North 89° 03' East 227.32 feet to a point on the Westerly line of County Road, the point of beginning, and running thence from said point of beginning North 89° 03' East 416.72 feet to the west line of the Tracy Quartz Mining Claim, and running thence North 5° 12' East 431.73 feet along the West side line of said Tracy Quartz Mining Claim, and beyond the Northwest corner thereof to the South side line of the Tracy Quartz Mining Claim, North 2° 26' East 39.02 feet; thence North 78° 01' West 509.83 feet along the South line of said OK Quartz Mining Claim to a point just West of the right of way of the Nevada County Narrow Gauge Railroad Company; thence North 86° 00' West 24.39 feet; thence South 24° 54' East 69.27 feet; thence South 14° 56' East 73.96 feet; thence South 2° 39' East 120.73 feet; thence South 79° 23' West 121.99 feet to a point on the Easterly line of County Road; thence North 70° 55' West 36.73 feet; thence South 8° 53' East 160.06 feet; thence South 39° 44' East 133.53 feet; thence South 45° 20' East 90.03 feet to the point of beginning. (Any mineral or sub-surface thereunder not vesting in the vestee herein)
- (22) As to Sub-parcel, etc. 26: As to the Idaho No. 6 and the Idaho No. 7 in the Deed dated May 22, 1953, recorded May 25, 1953, in Book "185" of Official Records, page 301, Filing No. 1787, executed by Idaho Maryland Mines Corporation to Gladys M. Perkins and Dean B. Perkins. (Any mineral, or sub-surface thereunder not vesting in the vestee herein)
- (23) As to Sub-parcel 33: The Quitclaim deed dated June 18, 1956, recorded June 26, 1956, in Book "222" of Official Records, at page 98, Filing No. 2390, Nevada County

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Records, executed by Idaho Maryland Mines Corporation, to Peter Zadra and Catherine Zadra, his wife, which deed conveyed the surface to a depth of 75 feet.

- (24) As to Sub-parcel 35: The Quitclaim deed dated December 30, 1957, recorded January 7, 1958, in Book "241" of Official Records, at page 106, executed by Idaho Maryland Mines Corporation to Sierra Nevada Memorial Hospital, which deed conveyed the surface and the subsurface to a depth of seventy-five (75) feet.
- (25) As to Sub-parcel 38: The Deed dated December 30, 1957, recorded January 7, 1958, in Book "241" of Official Records, at page 109, Nevada County Records, File No. 0055, executed by Idaho Maryland Mines Corporation to Sierra Nevada Memorial Hospital which deed conveyed the surface and the subsurface to a depth of 75 feet.
- (26) As to Sub-parcels 41, 42 (As to Lot 5): The deed dated March 11, 1958, recorded March 27, 1958, in Book "244" of Official Records, at page 155, Nevada County Records, Filing No. 1246, executed by Idaho Maryland Mines Corporation to Elmer C. Shorman, et al. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (27) As to Sub-parcel 41: The deed dated December 19, 1891 recorded May 7, 1892, in Book "77" of Deeds, at page 575, Nevada County Records, executed by Theodore H. Wilhelm to Leon Durbin. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (28) As to Sub-parcel 41: The deed dated December 14, 1912 recorded February 14, 1913, in Book "117" of Deeds, at page 66, Nevada County Records, executed by Ida Potter, formerly Ida Wilhelm, et al., to John Davey and T. W. Davey.
- (29) As to Sub-parcel 42: As to said Lot 5; in the deed dated May 18, 1897, recorded August 19, 1898, in Book "90" of Deeds, at page 378, Nevada County Records, executed by William H. Totten to Eliza Jane Thompson (Any mineral or sub-surface thereunder not vesting in the vestee herein) and in the quitclaim deed dated July 12, 1955, recorded July 14, 1955, in Book "209" of Official Records, at page 593, File No. 2895, Nevada County Records, executed by Idaho Maryland Mines Corporation to Walter Canon, Jr., which quitclaim deed conveyed the surface to a depth of 75 feet.

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- (30) As to Sub-parcel 43: The Deed dated December 9, 1886, recorded January 3, 1887, in Book "68" of Deeds, at page 291, Nevada County Records, executed by George Wilson to Richard Geach. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (31) As to Sub-parcel 43: The deed dated November 22, 1886, recorded May 3, 1894, in Book "79" of Deeds, at page 733, Nevada County Records, executed by George Wilson to John Collins.
- (32) As to Sub-parcel 44: The Quitclaim Deed dated April 28, 1950, recorded October 15, 1951, in Book "166" of Official Records, at page 533, File No. 4327, Nevada County Records, executed by Idaho Maryland Mines Corporation to R. E. Tremoureux, which deed excepted and reserved all minerals, metal matter and ores, lying and being more than 50 feet below the surface of said premises, together with the right to mine and extract the same without disturbing the surface of said premises.
- (33) As to Sub-parcel 48: As Parcel No. 4 in Quitclaim deed dated September 29, 1958, recorded August 7, 1959, in Book "266" Official Records, Nevada County, page 22, File No. 4277, executed by Idaho Maryland Mines Corporation, a Nevada corporation, to Loma Rica Industrial Park, which deed excepted all minerals, gas, oil, and mineral deposits of every kind and nature located below a depth of 75 feet beneath the surface, together with all necessary and convenient rights to explore for, develop, produce, extract and take the same, subject to the express limitation that the foregoing exception and reservation shall not include any right of entry upon the surface of said land without the consent of the owner of the surface of said land.
- (34) As to sub-parcel 50: As parcels Nos. 1 & 3 in the Quitclaim deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, page 22, File No. 4277, executed by Idaho Maryland Mines Corporation, a Nevada corporation to Loma Rica Industrial Park, which deed excepted all minerals, gas, oil, and mineral deposits of every kind and nature located below a depth of 75 feet beneath the surface, together with all necessary and convenient rights to explore for, develop, produce, extract and take the same, subject to the express limitation that the foregoing exception and reservation shall not include any right of entry upon the surface of said land without the consent of the owner of the surface of said land.
- (35) As to sub-parcel 50: As to all that portion lying within the exterior boundaries of that certain 385.316 acre tract of land described in the deed dated September 15, 1949, recorded September 19, 1949, in Book "140" of

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Official Records, Nevada County Records, at page 427, File No. 3695, executed by Idaho Maryland Mines Corporation, to Errol McBoyle, lying Southerly of the Southerly line of the parcels 1 and 3 in deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, File No. 4277, which Southerly line is more fully described as follows: Beginning at a point in the Westerly line of Section 30, Township 16 North, Range 9 East, M.D.B.&M., located North 1° 18' West 889.37 feet from the Southwest Section corner of Sec. 30 T 16 N. R. 9 E; thence from said point of beginning, North 81° 49' 42" East 233.85 feet; South 85° 17' 26" East 114.74 feet; North 58° 13' 48" East 531.11 feet; North 83° 37' 22" East 184.48 feet; South 81° 45' 32" East 29.93 feet; North 87° 19' East 145.17 feet; North 85° 47' East 129.78 feet; South 98° 49' East 63.27 feet; North 67° 31' East 31.78 feet; North 65° 34' East 20.41 feet; South 80° 27' East 111.81 feet; South 82° 14' East 93.09 feet; North 42° 59' East 205.21 feet; North 45° 21' 49" East 103.82 feet; North 60° 05' 19" East 191.99 feet; North 88° 15' 43" East 239.36 feet; North 84° 49' 37" East 356.14 feet; North 80° 28' 34" East 127.47 feet; North 43° 19' 19" East 182.83 feet; thence Southeasterly 500 feet, more or less, in a direct line to the point of ending; said point being on the South boundary of the North half of the Southeast quarter of said Section 30, distant thereon South 87° 43' 30" West 1988.32 feet from the Southeast corner of said North half of the Southeast quarter, Section 30, Township 16 North, Range 9 East.

- (36) As to sub-parcel 9, 18, 37: As Parcel No. 2 in the Quitclaim deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, page 22, File No. 4277, executed by Idaho Maryland Mines Corporation, a Nevada Corporation to Loma Rica Industrial Park, which deed excepted all minerals, gas, oil, and mineral deposits of every kind and nature located below a depth of 75 feet beneath the surface, together with all necessary and convenient rights to explore for, develop, produce, extract and take the same, subject to the express limitation that the foregoing exception and reservation shall not include any right of entry upon the surface of said land without the consent of the owner of the surface of said land.
- (37) As to sub-parcel 55: The deed dated June 22, 1908, recorded November 17, 1908, in Book "108" of Deeds, at page 601, executed by Joseph Goldsworthy, Richard Gauthier, Mary Sirard, Selina Dausse, Philomen McCarty, Frederick Wilkins and Frank Gauthier to Catherine Goldsworthy, which deed reserved

to the present owners of the Christopher Columbus Quartz Mine Patented the mineral within the exterior boundary of that part of Christopher Columbus Quartz Mine hereby conveyed with the right to work and remove the same.

NOTE: The following 3 parcels comprise a portion of this exception:

(a) The deed dated September 30, 1944, recorded February 23, 1945, in Book "24" of Official Records, Nevada County Records, at page 264, executed by Mary S. Austin to Myrtle Marsh, which deed excepted all portions of said real property situate more than 50 feet below the surface thereof, together with the right to work and mine the same below said depth and extract minerals therefrom, without disturbing the surface thereof.

(b) The Quitclaim Deed dated June 12, 1956, recorded June 26, 1956, in Book "222" of Official Records, Nevada County Records, at page, 98, executed by Idaho Maryland Mines Corporation, a corporation, to Peter Zadra et ux, which deed conveyed surface to a depth of 75 feet

(c) Quitclaim Deed dated June 12, 1956, recorded June 26, 1956, in Book "222" of Official Records, page 100, executed by Idaho Maryland Mines Corporation, to Carl M. Richardson et ux, which deed conveyed, the surface to a depth of 75 feet.

- (33) As to sub-parcel 55: That portion of the Christopher Columbus Treasury Lode Claim No. 225 as may overlap upon the Alpha Quartz Lode Mining Claim, Lot No. 66, Survey No. 711, in Section 25, Township 16 North, Range 8 East, R.D.M.
- (39) As to sub-parcels 1, 2, 3, 4, 5, 10, 13, 14 & 26: As set forth in Exhibit A in the deed dated August 3, 1959, recorded August 12, 1959, in Book "266" of Official Records, page 185, executed by Idaho Maryland Mines Corporation, a Nevada Corporation (Any mineral or subsurface thereunder not vesting in vestee herein) and more particularly set forth in Inter-County Title Co. companion Order No. 3134C-A.

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PARCEL NO. 2: All minerals and mining rights 100 feet below the surface of Lots 2, 4A and 4B in Block 9, of the Townsite of East Grass Valley, as said lots and block are designated on the Official Map of the said Townsite of East Grass Valley, made by Samuel J. Alderman, in the year 1890, with the privilege of extracting such minerals without disturbing the surface.

EXCEPTING THE FOLLOWING: (a) That portion of said Lot 4B described as follows: Beginning at the most Westerly corner of said Lot 4B, at the intersection of the Northeasterly line of the Crown Point Patent (Lot 141), and the Southerly line of the Nevada County Narrow Gauge Railroad right of way; thence, true bearings, along the Southerly right of way line of said railroad on a curve to the left with a radius of 1834.60 feet to a fence corner which is located North 69° 48' East 92.97 feet from the point of beginning; thence South 16° 01' East 119.28 feet; thence South 2° 26' East 22.87 feet and thence South 13° 52' West 24.82 feet to a point on the Northeasterly line of said Lot 141, and thence along said Northeasterly line North 41° 39' West 173.31 feet to the place of beginning. (b) The mineral rights of Frances Johns as described in the Judgment dated May 21, 1897, recorded March 22, 1933, in Book "15" of Official Records, page 499, wherein it is recited that said Frances Johns is the owner of that certain quartz mining claim and premises known as "Calumet Quartz Lode" with the right to work said lode beneath the surface of Lot 4-B, Block 9, East Grass Valley, from a point 35 feet beneath the surface of said lot downward.

PARCEL NO. 3: All minerals and mining rights 100 feet below the surface, with the privilege of extracting such minerals without disturbing the surface of: That portion of the Northeast quarter of the Southwest quarter of Section 26, in Township 16 North of Range 8 East, Mount Diablo Base and Meridian, described as follows:

Beginning at the Northwest corner of the Northeast quarter of the Southwest quarter of said Section 26; thence, true bearings, South 1° 26' 30" East 320.50 feet along the West line of said Northeast quarter of Southwest quarter to the center of the Idaho Ditch (so-called); thence following the center of said Idaho Ditch the following courses and distances: South 82° 24' East 111.52 feet; North 82° 51' East 113.38 feet; North 89° 41' East 67.20 feet; North 56° 06' East 38.32 feet; North 61° 52' East 30.45 feet; North 10° 43' West 74.66 feet; North 9° 40' East 61.09 feet; North 39° 20' West 65.03 feet; North 24° 19' West 60.75 feet and North 3° 51' West 52.70 feet to a point on the North line of said Northeast quarter of Southwest quarter of said Section 26, and thence South 88° 35' West 283.73 feet along said North line to the place of beginning.

PARCEL NO. 4: The sub-surface below a depth of Seventy-five (75) feet beneath the surface of the West half (W $\frac{1}{2}$ ) of the Southwest quarter (SW $\frac{1}{4}$ ) of the Southeast quarter (SE $\frac{1}{4}$ ) of Section 30, in Township 16 North, Range 9 East, M.D.B. & M., as described in that certain deed dated September 15, 1949, recorded September 19, 1949, executed by Idaho Maryland Mines Corporation, to Errol MacBoyle, in Book "140" of Official Records, page 427, Filing No. 3695, Nevada County Records.

PARCEL NO. 5: All the minerals, metal matter and rock contained under said premises with the right to extract at any time hereafter all the mineral, metal matter and rock contained under said property, from any depth up to and within 75 feet of the surface of said property, without disturbing the surface of the South half of the Southwest quarter (S $\frac{1}{2}$  of SW $\frac{1}{4}$ ) of Section 29 and the Southeast quarter of the Southeast quarter (SE $\frac{1}{4}$  of SE $\frac{1}{4}$ ) of Section 30, Township 16 North, Range 9 East, Mount Diablo Base and Meridian.

PARCEL NO. 6: All the mineral, metal matter and rock contained under said premises, with the right to extract at any time hereafter all the mineral, metal matter and rock contained under said property from any depth up to and within 75 feet of the surface of said property without disturbing the surface of the East half of the Northwest quarter of the Northeast quarter and East half of the North half of the Southwest quarter of the Northeast quarter of Section 31, Township 16 North, Range 9 East, M.D.B. & M., as excepted and reserved in the in the Deed dated July 22, 1954, recorded July 30, 1954, in Book "199" of Official Records, at page 10, Nevada County Records, File No. 9135, executed by Idaho Maryland Mines Corporation to John J. Looser.

PARCEL NO. 7: All oil, gas and minerals in and under and lying 100 feet below the surface of the North half of Lots 7 and 8 and the Lots 9 and 10 in Section 6, Township 15 North, Range 9 East, M.D.B. & M., and the East half of the Southeast quarter of Section 36, Township 16 North, Range 8 East, M.D.B. & M., together with the right at all times to enter on said lands and take all the usual, necessary or convenient means to bore wells, make excavations and to remove all the oil, gas and minerals found thereon, subject to certain conditions regarding protection and compensation for damage to growing crops and improvements, etc., all as described in the Deed dated June 8, 1935, recorded October 21, 1935, in Book "28" of Official Records, page 168, executed by California Lands Inc., a corporation, to Bank of America National Trust and Savings Association, a national banking association.

EXCEPTING THEREFROM those certain portions thereof lying within the exterior boundaries of the lands hereafter described:

HOWEVER, VESTING IN THE NAME OF THE VESTEE HEREIN, THE MINERALS OR SUB-SURFACE underlying such portions as are set forth in the following:

(a) The Quitclaim Deed dated September 17, 1957, recorded September 24, 1959, in Book "268" of Official Nevada County Records, at page 182, executed by Idaho Maryland Mines Corporation, a Nevada Corporation, which deed excepted all minerals, gas, oil and mineral deposits of every kind and nature located below a depth of 100 feet beneath the surface of said property.

(b) The Quitclaim Deed dated April 13, 1961, recorded June 13, 1961, in Book "298" of Official Nevada County Records, at page 420, executed by Idaho Maryland Industries, Inc., to Charles F. Burnham et ux, which deed excepted the mineral situate more than 100 feet below the surface thereof, together with the right to work and mine the said property below said depth and remove minerals therefrom without disturbing the surface thereof.

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Parcel No. 8: An undivided 3/5 th interest in and to the minerals below a depth of 100 feet of the surface of a portion of Lot 46 on Survey No. 283, known as the Biggs Placer Mining Claim, embracing a portion of Sections 35 and 36, Township 16 North, Range 8 East, M.D.B.&M., and of Section 1, Township 15 North, Range 8 East, M.D.M. described as follows, to-wit:

Commencing at the Northeast corner of said Section 1, Township 15 North, Range 8 East, M.D.B.&M., thence with true bearings along the Northwest-erly line of the "LeDuc Ranch" South 51° 53' West 1745.70 feet to a corner thereof; thence along the Southwesterly line of said ranch, South 22° 43' East 1320.00 feet to a Southerly corner thereof; thence along the Southerly line of said ranch, South 88° 13' East 792.00 feet to a corner thereof; thence along the Westerly line of said Wilson Ranch, South 1° 47' West 1275.84 feet to a corner thereof; thence along a Northerly line of said Wilson Ranch and along the Northerly lines of Gold Pick Extension Lode as the same is described in Book "32" of Mining Claims, at page 158, Nevada County Records, and of Golden Lead Lode Claim, Survey No. 5190, as the same is described in that certain Patent recorded in Book "4" of Patents, at page 612, Nevada County Records, and of Nesquehoning Mining Claim, Survey No. 4931, as the same is described in that certain Patent recorded in Book "4" of Patents, at page 493, Nevada County Records. South 88° 13' West 401.30 feet and South 89° 00' West 925.56 feet to the most Southerly corner of Electrum Mining Claim, Survey No. 4302, as the same is described in that certain Patent recorded in Book "4" of Patents, at page 383, Nevada County Records; thence North 0° 27' West 1279.54 feet to corner No. 8 of said Electrum Lode, Survey No. 4302, 1318.54 feet to a corner of said Electrum Lode; thence North 25° 58' 55" West 2199.11 feet along the Northeasterly lines of said Electrum Lode and of Biggs and Sims Quartz Mine, Lot 52, as the same is described in that certain Patent of record in Book "2" of Patents, at page 137, Nevada County Records, to a corner of said Biggs & Sims Lode, being also a corner of the Sebastopol Quartz Lode Mining Claim. Lots 38 and 44; thence along the Northeasterly line of said Sebastopol Quartz Lode Mining Claim as the same is described in that certain Patent of record in Book "2" of Patents, at page 646, Nevada County Records, North 56° 02' West 805.23 feet to the most Southerly corner of Old Houston Hill Location; thence along the Southerly line thereof, North 60° 50' East 79.91 feet to the most Easterly corner thereof; thence along the Easterly line thereof, the following successive courses and distances, to-wit: North 0° 17' West 75.29 feet, North 26° 54' West 1159.10 feet to the Northwest corner of the Southeast quarter of the Southeast quarter of Section 35, Township 16 North, Range 8 East, M.D.B.&M., being a Southerly corner of that certain tract of land described as Parcel No. 1 in the deed recorded in Book "92" of Official Records, at page 451, H. L. Brittan, et ux to Ernest Rhoads, et ux; thence along the Northerly line of said Southeast quarter of the Southeast quarter of Section 35 and along the Northerly line of the Southwest quarter of the Southwest quarter of Section 36, being also the Southerly lines of said Rhoads property as the same is described in said Book "92" of Official Records, at page 451, and of that certain tract of land described in the deed recorded in Book "86" of Official Records, at page 81, executed by C. W. Courtney et ux to George Crofoot, et ux and of the property of Anna C. H. Feldmann North 88° 52' 45" East 1979.00 feet to a point in said Northerly line of the Southwest quarter of the Southwest quarter of Section 36, being the Southerly line of the property of Anna C. H. Feldmann; thence leaving said Line South 1° 47' East 660.00 feet; thence North 88° 52' 45" East 661.00 feet to a point in the Westerly line of the Southeast quarter of the Southwest quarter of said Section 36, being the property of Mollie Lucas and Elizabeth Lucas Wemer; thence along said

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Westerly line the Southeast quarter of the Southwest quarter of Section 36, South 1° 47' East 673.68 feet to the Southwest corner of said Southeast quarter of the Southwest quarter of Section 36, being located in the Section line common to said Section 36, Township 16 North, Range 8 East, and Section 1, Township 15 North, Range 8 East, M.D.B.&M., thence along said common Section line, North 89° 12' East 854.04 feet to the place of beginning,

EXCEPTING THEREFROM (a) portion of that certain parcel of land as conveyed by the deed dated October 30, 1885, recorded November 2, 1885, in Book "67" of Deeds, at page 136 et seq., executed by Michael McGuire and Alexander Sims, Jr., to Orleans Mining Company, described as follows:

Beginning at the Northwest corner of the Southeast quarter of the Southeast quarter of Section 35, Township 16 North, Range 8 East, M.D. B.&M., and running thence South along the line of the Biggs and Sims Placer Mine (Patented), to a stake on the line South eight chains and fifty-five links; thence South 52° East six chains and twenty-four links to a post; thence South 17½° East, five chains and thirty links to a post; thence South 56½° East, One hundred and twenty-six links to a stake; thence North, Ninety-one links to the South post of the old Houston Hill location; thence North One hundred feet to a post; thence Northwesterly on a true line to the point of beginning, the whole of the portion of land so bounded being included under the United States Patent of the Biggs and Sims Placer Mine, and containing about 7 acres.

(b) All that certain portion of said Biggs Placer Mining Claim lying in Section 1, Township 15 North, Range 8 East, M. D.M.

Parcel No. 9: An undivided 3/10th interest in and to All the gold and gold bearing earth and rock and all precious metals, contained in the NW 1/4 of the SW 1/4 of Section 36 and the SE 1/4 of the SE 1/4

of Section 35, Township 16 North, Range 8 East, Mt. Diablo Base and Meridian, with the right to enter upon any portion of said premises lying south of the Ophir Ditch. Said parties of the second part may work or mine in any manner the said portion lying south of said Ophir Ditch, they paying to the party of the first part the amount of damage they may do to any timber thereon, and said parties of the second part may work the balance of said premises by means of drifting only, by means of tunnels, commencing in the said portion below the ditch or elsewhere, provided the same be commenced outside of the exterior boundaries of the balance of said premises. Said parties of the second do not hereby obtain the right to sluice or hydraulic away any of said premises South of said Ophir Ditch now enclosed, as described in the deed dated July 3rd, 1879, recorded July 3, 1879, in Book 56 of Deeds, at page 300 et seq., executed by Augustin Ducotey to William Biggs, Michael Maguire and Chas. W. Kitts, administrator of the estate of Phillip W. Roberts, deceased.

EXCEPTING THEREFROM the surface and subsurface to a depth of 100 feet below the present surface.

(Continued on Page 21 - Description)

**Parcel No. 10:** An undivided 9/35th interest in and to all the gold and gold bearing rock and earth and all the precious minerals, contained in the Southeast quarter of the Southeast quarter and the Southwest quarter of the Southeast quarter of Section 36, Township 16 North, Range 8 East, according to the United Survey, the said land being situated in Grass Valley Township, County of Nevada, and State of California, and also the right to enter in and upon said land and every part and parcel thereof for the purpose of mining thereon and extracting and taking away said precious minerals, rock and earth from the same, provided, however, that the said parties of the second part shall not ground sluice said land nor any part thereof, nor break nor disturb the surface thereof, except so far as may be actually necessary in sinking shafts or running tunnels, etc., and all shafts or prospecting holes that may be sunk upon said ground, without reaching any pay earth, gravel or quartz rock and for that reason abandoned shall be filled by the said parties of the second part at their sole cost and expenses, as soon as practicable, as described in the deed dated December 31, 1869, recorded January 10, 1870, in Book 35 of Deeds, at page 156 et seq., executed by David Bower to P. W. Roberts, A.B. Brady, William Biggs, W. J. Tilley, C.R. Edwards and Michael Maguire.

**EXCEPTING THEREFROM** the surface and subsurface to a depth of 100 feet below the present surface.

**TOGETHER WITH** all of the grantor's right, title and interest in and to any personal property, rights of way, water lines, power lines, and poles of any nature whatsoever located upon the property as hereinabove described, and/or appurtenant thereto.

**TOGETHER WITH** all of the grantor's right, title and interest in and to any real property, both surface and mineral rights, located in Nevada County, California.

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## **QUIT CLAIM DEED**

IDAHO MARYLAND INDUSTRIES INC., a corporation

quit claim unto

WILLIAM GHIDOTTI and MARIAN GHIDOTTI, his wife as tenants in common,  
All that real property situate in the County of Nevada, State of California, described as follows:

See Exhibit "A" attached.

Dated: June 10, 1963



EXHIBIT "A"

DESCRIPTION

All that real property situate in the County of Nevada, State of California, described as follows:

PARCEL No. 1: ALL MINERALS, GAS, OIL AND MINERAL DEPOSITS OF EVERY KIND AND NATURE LOCATED BELOW A DEPTH OF 200 FEET 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 WITHOUT THE CONSENT OF THE OWNER OF SUCH SURFACE OF SAID LAND as excepted in the deed dated June 15, 1959, recorded June 22, 1959, in Book "263" of Official Records, Nevada County Records, at page 381, executed by Idaho Maryland Mines Corporation, a Nevada Corporation to William G. Gilmore, such real property being all those portions of the following sub-parcels lying within the exterior boundaries of the land described in the instrument above referred; AND, ONLY MINERALS, GAS, OIL AND MINERAL DEPOSITS BELOW A DEPTH OF 200 FEET BENEATH SUCH SURFACE; TOGETHER WITH ALL NECESSARY AND CONVENIENT RIGHTS TO EXPLORE FOR, DEVELOP, PRODUCE, EXTRACT AND TAKE THE SAME, SUBJECT TO THE EXPRESS LIMITATION THAT THE FOREGOING EXCEPTION AND RESERVATION SHALL NOT INCLUDE ANY RIGHT OF ENTRY UPON THE SURFACE OF SAID LAND WITHOUT THE CONSENT OF THE OWNER OF SUCH SURFACE OF SAID LAND as excepted in the deed dated August 3, 1959, recorded August 12, 1959, in Book "266" of Official Records, Nevada County Records, page 185, executed by Idaho Maryland Mines Corporation, a Nevada corporation, to Oliver Investment Company, a Nevada Corporation, the real property being the remainder of those portions of the following sub-parcels lying outside the exterior boundaries of the land described in the first instrument above referenced; said sub-parcels being more particularly described as follows:

Sub-Parcel No. 1: The J.M. English Quartz Mine designated by the United States Surveyor General as Lot 54, embracing a portion of the Southeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 2: The Lucky or Agnes Quartz Mine, designated by the United States Surveyor General as Lot 129, embracing a portion of Sections 25 and 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 3: The Union Hill Quartz Mine designated by the United States Surveyor General as Lot 59, embracing a portion of Sections 25 and 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 4: The Centennial Quartz Lode Mining Claim, designated by the United States Surveyor General as Lot 106, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 5: The Halphene Quartz Lode Mining Claim, designated by the United States Surveyor General as Lot 202, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 6: The "Dorothy D" Lode Mining Claim, designated by the United States Surveyor General as Survey No. 5628, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 7: The Morning Dew Quartz Lode Mining Claim, designated by the United States Surveyor General as Lot 130, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B. & M.

Sub-Parcel No. 8: The Howard Hill Lode Mining Claim, designated by the United States Surveyor General as Survey No. 4613, embracing a portion of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 9: A portion of the Hoxie Placer Mining Claim, described as the Lot 6 of the Southeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 10: The Cambridge Quartz Mine, designated by the United States Surveyor General as Lot 128 embracing a portion of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 11: Gold Blossom Quartz Mine, designated by the United States Surveyor General as Lot 3697, embracing a portion of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 12: Lots 1, 2, 3, 4 and 5. of the Northeast quarter of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 13: Fractional West half of the Northeast quarter of Section 36, Township 16 North, Range 8 East, M.D.B.&M.

EXCEPTING THEREFROM that portion thereof lying within the exterior boundaries of Gold Blossom Quartz Mine Lot 3697, patented.

Sub-Parcel No. 14: The Northwest one-quarter (NW1/4) of Section 31, Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 15: The Southwest one-quarter (SW1/4) of Section 31, Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 16: Eureka Gold Mining Co.'s Claim, being Lot 41, located in Section 26, Township 16 North, Range 8 East, M.D.B.&M., more particularly described at length in Letters Patent issued September 13, 1869, by the United States of America, and recorded September 30, 1869, in Book "34" of Deeds, Nevada County Records, page 323.

Sub-Parcel No. 17: Tracy Quartz Lode Mining Claim, being Lot 193, located in Section 25, Township 16 North, Range 8 East, M.D.B.&M., designated in Survey #2985 by the Surveyor General and more particularly described at length in Letters Patent issued January 20, 1902, by the United States of America, recorded September 7, 1910, in Book "4" of Patents, Nevada County Records, page 434.

Sub-Parcel No. 18: Independence Quartz Lode Mining Claim, being Lot 120, located in Section 25, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #2210 by the Surveyor General and more particularly described at length in Letters Patent issued April 4, 1889, by the United States of America, and recorded May 4, 1889, in Book "2" of Patents, Nevada County Records, page 520.

Sub-Parcel No. 19: Alpha Quartz Lode Mining Claim, being Lot 66, located in Sections 25 & 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #711 by the Surveyor General and more particularly described at length in Letters Patent

issued April 9, 1892, by the United States of America, and recorded June 12, 1894, in Book "3" of Patents, Nevada County Records, page 267.

Sub-Parcel No. 20: Black Hawk Extension Lode Mining Claim, designated by the United States Surveyor General as Lot 4218 located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., more particularly described at length in Letters Patent issued June 30, 1905, by the United States of America, recorded May 1, 1916, in Book "4" of Patents, Nevada County Records, page 577.

Sub-Parcel No. 21: Those certain Quartz Mines known as the A.B.C. and OK Mines being Lots Nos. 167 and 168 respectively, embracing a portion of Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., as designated on the official plat by the United States Surveyor General, and more particularly described at length in the U.S. Patent dated May 5, 1897, and recorded May 6, 1916, in Book "4" of Patents, Nevada County, at page 579.

EXCEPTING THEREFROM all that portion thereof embraced in Lot 7 of the Southeast quarter of the Northeast quarter of said Section 26.

Sub-Parcel No. 22: That certain mine known as the Gamblers Gold and Silver Lode Mine, being Lot (Survey) No. 4217, embracing a portion of Section 26, Township 16 North, Range 8 East, M.D.B.&M., as designated on the official plat by the United States Surveyor General, and more particularly described at length in the U.S. Patent dated March 18, 1907, recorded June 6, 1916, in Book "4" of Patents, Nevada County, at page 584.

Sub-Parcel No. 23: The South half of the Southeast quarter; the Northwest quarter of the Southeast quarter; the South half of the Southwest quarter; and the Northeast quarter of the Southwest quarter, all in Section 24, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 24: The North half of the Northeast quarter; the Northeast quarter of the Northwest quarter; and Lot 1 of the Northwest quarter of the Northwest quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

EXCEPTING THEREFROM all that portion of Lot 1 of the Northwest quarter of the Northwest quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M., lying South of the South rail of the Nevada County Narrow Gauge Railway Company track.

Sub-Parcel No. 25: That certain Quartz Mine known as the Kentucky Quartz Mine, being Lot 133, embracing a portion of Section 25 & 26, Township 16 North, Range 8 East, M.D.B.&M., designated on the official plat by the United States Surveyor General, and more particularly described at length in the U.S. Patent dated March 13, 1890, recorded July 8, 1896, in Book "3" of Patents, Nevada County, at page 507.

Sub-Parcel No. 26: Idaho No. 1, Idaho No. 2, Idaho No. 3, Idaho No. 5, Idaho No. 6, Idaho No. 7, Idaho No. 11, Idaho No. 12, Maryland # 22, Maryland # 23, Maryland # 24, Maryland Fraction, Maryland Extension Fraction, Gold Point Fraction and Gold Point Extension Lode Mining Claims, designated by the United States Surveyor General as for the State of California, as Survey No. 5514, embracing a portion of Sections twenty-five and twenty-six, Township Sixteen North, Range Eight East, Mount Diablo Meridian, and more particularly described at length in the Patent issued by United States of America to Idaho Maryland Mines Co., dated January 17, 1923, recorded in the Office of the County Recorder of Nevada County on January 31, 1923, in Book "6" of Patents, at page 149.

Sub-Parcel No. 27: (a) The Southwest quarter of the Northeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.  
(b) The Southeast quarter of the Northeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 28: Baby Lode Claim and Pinafore Lode Claim, located in the South half of Section 25, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #4216 by the Surveyor General and more particularly described in Letters Patent issued by the United States of America, October 11, 1909, and recorded May 19, 1916, in Book "4" of Patents, Nevada County Records, page 583.

Sub-Parcel No. 29: Maryland Consolidated Quartz Mining Claim comprising the Maryland and Maryland Extension Location Lodes and Maryland Extension Mill Site Claims, being Lots 144, 145 and 146, respectively, located in the South half of Section 25, Township 16 North, Range 8 East, designated as Survey # 2535 by the Surveyor General and more particularly described in Letters Patent issued by the United States of America, March 17, 1893, and recorded February 2, 1903, in Book "4" of Patents, Nevada County Records, page 144.

Sub-Parcel No. 30: Maryland Extension Quartz Mine Lode, located in the Northeast quarter of the Southeast quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #3679 by the Surveyor General and more particularly described in Letters Patent issued by the United States of America, April 1, 1904, and recorded June 5, 1918, in Book "6" of Patents, Nevada County Records, at page 21.

Sub-Parcel No. 31: Gold Point Consolidated Gold and Silver Mining Company's Lode Mining Claim, being Lot 107, located in the South half of Section 25, Township 16 North, Range 8 East, designated as Survey # 1892, by the Surveyor General and more particularly described in Letters Patent issued by the United States of America, October 23, 1886, and recorded April 7, 1886, in Book "2" of Patents, Nevada County Records, at page 421.

Sub-Parcel No. 32: Idaho Millsite Claim, being Lot #138, located in the Northeast quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey #2509 by the Surveyor General and more particularly described at length in Letters Patent issued June 18, 1896, by United States of America, and recorded February 2, 1903, in Book "4" of Patents, Nevada County Records, at page 141.

Sub-Parcel No. 33: East Eureka Lode Mining Claim, located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey # 5515 by the Surveyor General and more particularly described at length in Letters Patent issued September 25, 1922, by United States of America, and recorded September 28, 1923, in Book "6" of Patents, Nevada County Records, at page 169.

Sub-Parcel No. 34: Idaho Mining Company's Claim, being Lot 38 located in the East half of the Northeast quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey # 24 by the Surveyor General and more particularly described at length in Letters Patent issued December 4, 1869, by United States of America, and recorded December 20, 1869, in Book "35" of Deeds, Nevada County Records, at page 26.

Sub-Parcel No. 35: Lot 13; in Section 25, Township 16 North, Range 8 East, as described in Letters Patent issued December 9, 1896, by United States of America, and recorded February 10, 1897 1869, in Book "3" of Patents, Nevada County Records, at page 585.

Sub-Parcel No. 36: Grant Quartz Mine Claim, being Lot 62, located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey # 634 by the Surveyor General and more particularly described at length in Letters Patent issued August 1, 1878, by United States of America, and recorded August 23, 1878, in Book "1" of Patents, Nevada County Records, at page 484.

Sub-Parcel No. 37: That portion of the Hoxie Placer Mining Claim, lying within Lot 5, of the Southeast quarter of Section 25, Township 16 North, Range 8 East, as described in Letters Patent issued June 20, 1904, by United States of America, and recorded August 13, 1910, in Book "4" of Patents, Nevada County Records, at page 433.

Sub-Parcel No. 38: Roannaise Lode, being Lot 116, located in Section 23 and 26, Township 16 North, Range 8 East, M.D.B.&M., designated as Survey No. 2083,

Sub-Parcel No. 39: Schofield Lode, being Lot 37, located in Sections 25 and 26, Township 16 North, Range 8 East, M.D.B.&M., as designated by the Surveyor General, and more particularly described at length in Patent issued October 10, 1868, and recorded December 28, 1868, in Book "32" of Deeds, Nevada County Records, at page 422.

Sub-Parcel No. 40: Morehouse Quartz Mine, Vein, Lode, Ledge, or Deposit, being Lot 53, located in Section 26, Township 16 North, Range 8 East, M.D.B.&M., as designated by the Surveyor General, and more particularly described at length in Patent issued April 4, 1873, and recorded May 22, 1873, in Book "1" of Patents, Nevada County Records, at page 9.

Sub-Parcel No. 41: The Lot Numbered Three (3) of the Northeast one-quarter and the Lot Numbered Seventeen (17) of the Northwest one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., containing 39.49 acres, according to the amended plat of said Section 26 filed in the United States Land Office at Sacramento, California, August 7, 1886.

Sub-Parcel No. 42: The Lots Numbered 5 and 7 of the Northeast one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 43: All that portion of Lot Numbered 9 of the Northeast one-quarter of the Southwest one-quarter and a portion of the Northwest one-quarter of the Southeast one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M., lying on the North side of the Nevada County Narrow Gauge Railroad Company's railroad track.

Sub-Parcel No. 44: Beginning at Station 837+10 on the located center line of the Nevada County Narrow Gauge Railroad, thence following along said center line of said railroad to Station 850+50, and taking a strip of land 40 feet wide on each side of said center line of said railroad; the above being in the Northwest one-quarter of the Southeast one-quarter of Section 26, Township 16 North, Range 8 East; thence from said Station 850+50 and following along said center line of said railroad to Station 864+10 and taking a strip of land 40 feet wide on each side of said center line of said railroad; the above being in the Northeast one-quarter of the Southwest one-quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 45: The Southeast one-quarter of the Northwest one-quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 46: Lot 3 of the Northwest quarter of Section 25, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 47: The Southeast quarter of the Southeast quarter of the Northeast quarter of Section 26, Township 16 North, Range 8 East, M.D.B.&M.

Sub-Parcel No. 48: Lot 1 of the Northwest quarter of Section 30, in Township 16 North, Range 9 East, M.D.B.&M., and the Northeast quarter of the Northwest quarter of Section 30, and the North half of the Northeast quarter of Section 30, in Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 49: The Southeast quarter of the Southwest quarter, and Lot 4 of the Southwest quarter of Section 19, in Township 16 North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 50: Lot 2 of the Northwest quarter and the Southeast quarter of the Northwest quarter, Lots 3 and 4 of the Southwest quarter, the Northeast quarter of the Southwest quarter, and the West half of the Southeast quarter of the Southwest quarter; the North half of the Southeast quarter; and the South half of the Northeast quarter, all in Section 30, Township Sixteen (16) North, Range 9 East, M.D.B.&M.

Sub-Parcel No. 51: Reservoir Site, as reserved in the deed dated September 15, 1949, recorded September 19, 1949, Filing No. 3695, described as follows, to-wit: Commencing at Corner No. 1 from which the southwest corner of Section 30, Township 16 North, Range 9 East, M.D.B.&M., bears South 49° 44' 20" West 948.74 feet distant; thence from said Corner No. 1, with true bearings, North 52° 09' West 165.61 feet to Corner No. 2; thence North 39° 36' 49" East 136.64 feet to Corner No. 3; thence South 52° 09' East 105.61 feet center of ditch, 165.61 feet to Corner No. 4; thence South 39° 36' 49" West 136.64 feet to Corner No. 1, the place of beginning.

Sub-Parcel No. 52: A portion of Survey No. 283 or Lot No. 46, Biggs Placer, described as follows, to-wit: Commencing at the corner designated in the patent as a post in the center of the Southwest quarter of Section 36, Township 16 North, Range 8 East, M.D.M., thence along an East line of said Biggs Placer, South 660.00 feet; thence leaving said East line, West 660.00 feet; thence North parallel to said East line, 660.00 feet to a point on the Northerly line of said Biggs Placer; thence along said Northerly line, East 660.00 feet to the place of beginning.

Sub-Parcel No. 53: The Champion Lode Mining Claim, designated by the Surveyor General as Survey No. 4826, in embracing a portion of Section 1, in Township 15 North, Range 8 East, M.D.B.&M., as described in the Patent from the United States of America to Benjamin F. Berriman, dated November 15, 1912, recorded December 4, 1912, in Book "4" of Patents, at page 497.

EXCEPTING THEREFROM all that certain portion of said Champion Lode Mining Claim lying in Section 1, Township 15 North, Range 8 East, M.D.M.

Sub-Parcel No. 54: The Josephine Lode Mining Claim, being a portion of Mineral Survey No. 4638, located in Section 1, Township 15 North, Range 8 East, M.D.B.&M.

EXCEPTING THEREFROM all that certain portion of said Josephine Lode Mining Claim lying in Section 1, Township 15 North, Range 8 East, M.D.M.

Sub-Parcel No. 55: An undivided 3/10<sup>th</sup> interest in and to The Christopher Columbus Consolidated Quartz Mining Claim designated by the Surveyor General as Lots 224 and 225, Survey No. 3399, embracing a portion of Sections 25 and 26, Township 16 North, Range 8 East, M.D.M., containing in the aggregate 21.59 acres, more or less, as described in the Patent dated February 1, 1899, recorded August 11, 1942, in Book "80" of Official Records, at page 23, Nevada County Records.

EXCEPTING FROM the above described sub-parcels those certain portions thereof lying within the exterior boundaries of the lands hereafter described:

HOWEVER VESTING IN THE NAME OF THE VESTEE HEREIN THE MINERALS or SUB-SURFACE underlying such portions as are set forth in the following:

- (1) As to Sub-parcels 1, 6, 9, 18, 37: As Parcel No. 2 in the deed dated July 22, 1954, recorded July 30, 1954, in Book "199" of Official Records, at page 10, Nevada County Records, File No. 9135, executed by Idaho Maryland Mines Corporation, a Nevada Corporation, to John J. Looser a widower, which deed excepted and reserved all the mineral, metal matter and rock contained under said premises, with the right to extract at any time hereafter all the mineral, metal matter and rock contained under said property from any depth up to and within 75 feet of the surface of said property, without disturbing the surface thereof.
- (2) As to Sub-parcels 1, 6, 9: The deed dated July 8, 1955, recorded July 15, 1955, in Book "211" of Official Records, at page 14, Nevada County Records, File No. 2934, executed by Idaho Maryland Mines Corporation to Roy L. Dodge et ux, which deed conveyed the surface to a depth of 75 feet.
- (3) As to Sub-parcels 1, 6, 9, 14, 15, 18, ptn. 26 (Idaho 22 and Maryland Extension Fraction), 27a, 29: As Parcel No. 1 in the deed dated October 14, 1955, recorded November 4, 1955, in Book "214" of Official Records, at page 431, Nevada County Records, File No. 4722, executed by Idaho Maryland Mines Corporation to County of Nevada, which deed excepted and reserved the perpetual right and ownership, together with the right to mine for, extract and ship, together with the right to mine for, extract and take minerals from beneath the surface of, and the sub-surface of that portion of the property lying more than 50 feet beneath the surface thereof.
- (4) As to Sub-parcels 1, 6, 9, 12: In the Deed dated December 4, 1956, recorded December 10, 1956, in Book "227" of Official Records, at page 290, Nevada County Records, File No. 4996, executed by Idaho Maryland Mines Corporation, to Malcolm E. Hemmill et ux, which deed conveyed the surface to a depth of 75 feet.
- (5) As to Sub-parcels 3, 5, 12: The deed dated August 31, 1956, recorded September 5, 1956, in Book "224" of Official Records, at page 286, Nevada County Records, File No. 3700, executed by Idaho Maryland Mines Corporation to Vivian Normile et vire, which deed conveyed the surface to a depth of 75 feet.
- (6) As to Sub-parcel 14: Beginning at the one-quarter section corner on the North boundary of said Section 31, Township 16 North, Range 9 East, M.D.M., and thence running South 1° 10' East along the center line of Section 31, 1742.4 feet to the Southeast corner of the tract hereby reserved; thence South 87° 29' West 1000 feet to the Southwest corner of this tract; thence North 1° 10' West 1742.4 feet to the Northwest corner of this tract on the line between Sections 30 and 31, said Township and Range; thence following said line Easterly, North 87° 29' East 1000 feet to the place of beginning, from which all the quartz and mineral therein beneath the surface and all rights for tunnels, drifts and underground working, necessary or proper to work all quartz ledges

beneath the surface, not to interfere with the use thereof for agriculture purposes.

- (7) As to Sub-parcel 14: The deed dated December 3, 1956, recorded December 10, 1956, in Book "227" of Official Records, at page 292, Nevada County Records, file No. 4997, executed by Idaho Maryland Mines Corporation to Milton Balmain, which deed conveyed the surface and sub-surface to a depth of 75 feet below the surface.
- (8) As to Sub-parcel 15: The deed dated March 26, 1946, recorded April 12, 1946, in Book "105" of Official Records, at page 176, Nevada County Records, File No. 1914, executed by Idaho Maryland Mines Corporation to Nevada Irrigation District. (Any mineral or sub-surface thereunder not vesting in the vestee herein.)
- (9) As to Sub-parcels 15, 50: As Parcel 4 (2), the deed dated September 15, 1949, recorded September 19, 1949, in Book "140" of Official Records, at page 427, Nevada County Records, file No. 3695, executed by Idaho Maryland Mines corporation to Errol MacBoyle, which deed conveyed the surface rights to a depth of 75 feet in and on and to that certain real property.
- (10) As to Sub-parcel 15: The deed dated April 16, 1956, recorded April 19, 1956, in Book "219" of Official Records, at page 547, Nevada County Records, file No. 1414, executed by Idaho Maryland Mines Corporation to John Grimes et ux, which deed conveyed the surface to a depth of 75 feet.
- (11) As to Sub-parcel 15: The deed dated November 7, 1956, recorded November 13, 1956, in Book "226" of Official Records, at page 300, Nevada County Records, file No. 4605, executed by Idaho Maryland Mines Corporation to John Grimes et ux, which deed conveyed the surface to a depth of 75 feet.
- (12) As to Sub-parcels 19, 23, 24, 25: The deed dated October 22, 1948, recorded October 23, 1948, in Book "136" of Official Records, at page 17, File No. 4801, Nevada County Records, executed by Idaho Maryland Mines Corporation to Errol MacBoyle, which deed conveyed the surface rights to a depth of 75 feet.
- (13) As to Sub-parcels 16, 38, 41, 42 (As to Lot 5): The deed dated July 8, 1955, recorded July 14, 1955, in Book "209" of Official Records, at page 594, File No. 2806, Nevada County Records, executed by Idaho Maryland Mines Corporation to Walter V. Canon and Ida F. Canon, his mother, which deed conveyed the surface rights to a depth of 75 feet.
- (14) As to Sub-parcels 17, 21, ptn. 26 (Idaho 1, 2 & 6), 28: The Quitclaim deed dated February 7, 1957, recorded October 22, 1957, in Book "238" of Official Records, at page 207, File No. 4780, Nevada County Records, executed by Idaho Maryland Mines Corporation to Gladys M. Perkins, a widow, and Edwin H. Brunning and Wenona E. Bruning, his wife, which deed quitclaimed to said grantees "the identical premises described as Parcel 7 in the Deed dated February 7, 1945, April 7, 1945, recorded in Book "94" of Official Records, at page 360, File No. 825, Nevada County Records. (Any mineral or subsurface thereunder not vesting in the vestee herein).



- (15) As to Sub-parcels 20, 21, 22, ptn. 26 (Idaho Nos. 1, 2, 3, 7, 12, Gold Point Extension), 39, 42 (As to Lot 7), 43, 44, 46, 47: As Parcel No. 1 in the deed dated October 17, 1957, recorded October 22, 1957, in Book "238" of Official Records, at page 209, executed by Idaho Maryland Mines Corporation to Gladys M. Perkins, a widow, and Edwin H. Bruning and Wenona E. Bruning, his wife, which deed excepted and reserved all minerals, metal matter and ores lying and being more than 100 feet from the surface of the above described property, together with the right to mine and extract the same without disturbing the surface of the said premises.

FULLY EXCEPTING, HOWEVER, the portions described as follows:

(a) That portion of the U.S. Grant Lode lying within the exterior boundaries of the Idaho No. 2 particularly described as follows: Beginning at the Northwest corner of Survey No. 4217, the U.S. Grant Lode; thence along said Northerly line of the U.S. Grant Lode, South 86° 00' East 110.44 feet; thence leaving said Northerly line South 49° 17' West 140.03 feet to the Westerly line of said U.S. Grant Lode; thence along said Westerly line North 2° 20' West 99.13 feet to the point of beginning.

(b) That portion of the U.S. Grant Lode lying within the exterior boundaries of the Idaho No. 2 & Idaho #7 particularly described as follows: Beginning at the Northwest corner of the lot herein described at the intersection of the North line of survey No. 4217, U.S. Grant lode and the fence at the Easterly side of the Grass Valley-Colfax road, at South 86° East 110.44 feet from the Northwest corner of the U.S. Grant lode; thence along said North line of the U.S. Grant lode South 86° 00' East 353.70 feet to intersection with the fence line at the Easterly side of the O'Keeffe enclosure and the West side of the N.C.N.G.RR thence along said fence South 25° 54' East 69.27 feet to fence angle; thence South 14° 56' East 73.96 feet to fence angle; thence South 2° 39' East 120.73 feet to fence corner at the Southeast corner of the O'Keeffe enclosure; thence South 79° 23' West 121.99 feet to fence corner at the East side of the Grass Valley-Colfax Road; thence North 70° 55' West 36.73 feet to fence corner at the West side of the Grass Valley-Colfax Road and the Southeast corner of that portion of the O'Keeffe enclosure on the West side of the road; thence along fence South 87° 26' West 79.86 feet, intersecting the section line between sections 25 and 26, at North 3° 16' West 317.78 feet from the ¼ ¼ section corner 206.82 feet to fence angle; thence North 86° 38' West 143.69 feet, intersecting the West line of the U.S. Grant lode; thence along the West line of the U.S. Grant; North 2° 20' West 199.69 feet intersecting the fence line on the Southeast side of the Grass Valley-Colfax Road; thence along said fence North 49° 17' East 140.03 feet to the place of beginning.

- (16) As to Sub-parcels 22, ptn. 26 (Idaho Nos. 2, 6, 7): The deed dated January 7, 1954, recorded January 13, 1954, in Book \_\_\_\_\_ of Official Records, page \_\_\_\_\_, Filing No. 6304, Nevada County Records, executed by Idaho Maryland Mines Corporation to Dean B. Perkins and Gladys F. Perkins, husband and wife. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (17) As to Sub-parcel 23: The Quitclaim deed dated October 26, 1954, recorded October 26, 1954, in Book "201" of Official Records, at page 314, Filing No. 11657, Nevada County Records, executed by Idaho

Maryland Mines Corporation to Glenn W. Jones et ux, which deed conveyed the surface rights to a depth of 75 feet.

- (18) As to Sub-parcel 23: The deed dated October 28, 1954, recorded November 1, 1954, in Book "201" of Official Records, at page 354, Filing No. 11707, Nevada County Records, executed by Idaho Maryland Mines Corporation to Nevada County Horsemen, Inc., which deed excepted all the mineral, ore and metal under such said property, with the right to extract the same from any depth up to 75 feet of the surface of said property, without disturbing the surface thereof.
- (19) As to Sub-parcel 23: The Correctory Deed dated July 11, 1955, recorded July 28, 1955, in Book "211" of Official Records, at page 158, Filing No. 3137, Nevada County Records, executed by Idaho Maryland Mines Corporation to George E. Maurer, which deed conveyed the surface to a depth of 75 feet.
- (20) As to Sub-parcels 24, 25: The Deed dated June 26, 1957, recorded August 8, 1957, in Book "235" of Official Records, at page 327, Filing No. 3360, Nevada County Records, executed by Idaho Maryland Mines Corporation to John B. Gwin et ux, which deed conveyed the surface and the subsurface to a depth of 75 feet below the surface.
- (21) As to sub-parcel, ptn. 26: Portions of Idaho No. 1, Idaho No. 2 and Idaho No. 6 Lode Mining Claims, as said claims are particularly described in the patent issued by the United States of America to Idaho Maryland Mines Co., dated January 17, 1923, recorded January 31, 1923, in Book "6" of Patents, page 149, Nevada County Records, said portions being described as follows, to-wit: A portion of Section 25, Township 16 North, Range 8 East, M.D.M., Nevada County, California: Commencing at the quarter quarter section corner on the North and South section line on the West side of Section 25, Township 16 North, Range 8 East, lying half way between the section corner common to Sections 25, 26, 35 and 36 and the quarter section corner on the North and South section line between said Sections 25 and 26, said Township and Range, and running thence North 89° 03' East 228.82 feet to a point on the Westerly line of County Road, the point of beginning and running thence from said point of beginning North 89° 03' East 416.72 feet to the west line of the Tracy Quartz Mining Claim, and running thence North 5° 12' East 431.73 feet along the West side line of said Tracey Quartz Mining Claim, and beyond the Northwest corner thereof to the South side line of the O.K. quartz Mining Claim, North 2° 26' East 38.02 feet; thence North 78° 01' West 509.83 feet along the South line of said OK Quartz Mining Claim to a point just West of the right of way of the Nevada County Narrow Gauge Railroad Company; thence North 86° 00' West 24.89 feet; thence South 24° 54' East 69.27 feet; thence South 14° 56' East 73.96 feet; thence South 2° 39' East 120.73 feet; thence South 79° 23' West 121.99 feet to a point on the Easterly line of County Road; thence North 70° 55' West 36.73 feet; thence South 8° 53' East 160.06 feet; thence South 39° 44' East 133.53 feet; thence South 45° 20' East 80.03 feet to the point of beginning. (Any mineral or sub-surface thereunder not vesting in the vestee herein.)
- (22) As to Sub-parcel ptn. 26: As to the Idaho No. 6 and the Idaho No. 7 in the deed dated May 22, 1953, recorded May 25, 1953, in Book "185" of Official Records, page 301, Filing No. 1787, executed by Idaho Maryland

Mines Corporation to Gladys M. Perkins and Dean B. Perkins. (Any mineral, or sub-surface thereunder not vesting in the vestee herein).

- (23) As to Sub-parcel 33: The Quitclaim deed dated June 18, 1956, recorded June 26, 1956, in Book "222" of Official Records, at page 98, Filing No. 2390, Nevada County Records, executed by Idaho Maryland Mines Corporation to Peter Zadra and Catherine Zadra, his wife, which deed conveyed the surface rights to a depth of 75 feet.
- (24) As to Sub-parcel 36: The Quitclaim deed dated December 30, 1957, recorded January 7, 1958, in Book "241" of Official Records, at page 106, executed by Idaho Maryland Mines Corporation to Sierra Nevada Memorial Hospital, which deed conveyed the surface and the subsurface to a depth of seventy-five (75) feet.
- (25) As to Sub-parcel 38: The Deed dated December 30, 1957, recorded January 7, 1958, in Book "241" of Official Records, at page 109, Nevada County Records, File No. 0055, executed by Idaho Maryland Mines Corporation to Sierra Nevada Memorial Hospital which deed conveyed the surface and the subsurface to a depth of 75 feet.
- (26) As to Sub-parcels 40, 42 (As to Lot 5): The deed dated March 11, 1958, recorded March 27, 1958, in Book "244" of Official Records, at page 155, Nevada County Records, Filing No. 1246, executed by Idaho Maryland Mines Corporation to Elmer C. Shorman, et al. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (27) As to Sub-parcel 41: The deed dated December 19, 1891, recorded May 9, 1892, in Book "77" of Deeds, at page 575, Nevada County Records, executed by Thoodore H. Wilhelm to Leon Durbin. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (28) As to Sub-parcel 41: The deed dated December 14, 1912, recorded February 14, 1913, in Book "117" of Deeds, at page 66, Nevada County Records, executed by Ida Potter, formerly Ida Wilhelm, et al., to John Davey and T.W. Davey.
- (29) As to Sub-parcel 42: As to said Lot 5; in the deed dated May 18, 1897, recorded August 19, 1898, in Book "90" of Deeds, at page 378, Nevada County Records, executed by William H. Totten to Eliza Jane Thompson (Any mineral or sub-surface thereunder not vesting in the vestee herein) and in the quitclaim deed dated July 12, 1955, recorded July 14, 1955, in Book "209" of Official Records, at page 593, File No. 2895, Nevada County Records, executed by Idaho Maryland Mines Corporation to Walter Canon, Jr., which quitclaim deed conveyed the surface to a depth of 75 feet.
- (30) As to Sub-parcel 43: The Deed dated December 9, 1886, recorded January 3, 1887, in Book "68" of Deeds, at page 291, Nevada County Records, executed by George Wilson to Richard Geach. (Any mineral or sub-surface thereunder not vesting in the vestee herein).
- (31) As to Sub-parcel 43: The deed dated November 22, 1886, recorded May 3, 1894, in Book "79" of Deeds, at page 733, Nevada County Records, executed by George Wilson to John Collins.

- (32) As to Sub-parcel 44: The Quitclaim Deed dated April 28, 1950, recorded October 15, 1951, in Book "166" of Official Records, at page 583, File No. 4327, Nevada County Records, executed by Idaho Maryland Mines Corporation to R.E. Tremoureux, which deed excepted and reserved all minerals, metal matter and ores, lying and being more than 50 feet below the surface of said premises, together with the right to mine and extract the same without disturbing the surface of said premises.
- (33) As to Sub-parcel 48: As Parcel No. 4 in Quitclaim deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, page 22, File No. 4277, executed by Idaho Maryland Mines Corporation, a Nevada corporation, to Loma Rica Industrial Park, which deed excepted all minerals, gas, oil, and mineral deposits of every kind and nature located below a depth of 75 feet beneath the surface, 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 without the consent of the owner of the surface of said land.
- (34) As to sub-parcel 50: As parcels Nos. 1 & 3 in the Quitclaim deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, page 22, File No. 4277, executed by Idaho Maryland Mines Corporation, a Nevada corporation, to Loma Rica Industrial Park, which deed excepted all minerals, gas, oil, and mineral deposits of every kind and nature located below a depth of 75 feet beneath the surface, together with all necessary and convenient rights to explore for, develop, produce, extract and take the same, subject to the express limitation that the foregoing exception and reservation shall not include any right of entry upon the surface of said land without the consent of the owner of the surface of said land.
- (35) As to sub-parcel 50: As to all that portion lying within the exterior boundaries of that certain 385.316 acre tract of land described in the deed dated September 15, 1949, recorded September 19, 1949, in Book "140" of Official Records, Nevada County Records, at page 427, File No. 3695, executed by Idaho Maryland Mines Corporation to Errol McBoyle, lying Southerly of the Southerly line of the parcels 1 and 3 in deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, File No. 4277, which Southerly line is more fully described as follows: Beginning at a point in the Westerly line of Section 30, Township 16 North, Range 9 East, M.D.B.&M., located North 1° 18' West 889.37 feet from the Southwest Section corner of Sec. 30 T 16 N, R 9 E; thence from said point of beginning North 81° 49' 42" East 233.85 feet, South 85° 17' 26" East 114.74 feet; North 58° 13' 48" East 531.11 feet; North 83° 37' 22" East 184.48 feet; South 81° 45' 32" East 29.93 feet; North 87° 19' East 145.17 feet; North 85° 47' East 129.78 feet; South 88° 49' East 63.27 feet; North 67° 31' East 31.78 feet; North 65° 34' East 20.41 feet; South 80° 27' East 111.81 feet; South 82° 14' East 93.09 feet; North 42° 59' East 205.21 feet; North 45° 21' 49" East 103.82 feet; North 60° 05' 19" East 191.99 feet; North 88° 15' 43" East 239.36 feet; North 84° 49' 37" East 356.14 feet; North 80° 28' 34" East 127.47 feet; North 43° 19' 19" East 182.83 feet; thence Southeasterly 500 feet, more or less, in a direct line to the point of ending; said point being on the South boundary of the North half of the Southeast quarter of said Section 30, distant thereon South 87° 43' 30"

West 1988.32 feet from the Southeast corner of said North half of the Southeast quarter, Section 30, Township 16 North, Range 9 East.

- (36) As to sub-parcel 9, 18, 37: As Parcel No. 2 in the Quitclaim deed dated September 29, 1958, recorded August 7, 1959, in Book "266" of Official Records, Nevada County Records, page 22, File No. 4277, executed by Idaho Maryland Mines Corporation, a Nevada Corporation to Loma Rica Industrial Park, which deed excepted all minerals, gas, oil, and mineral deposits of every kind and nature located below a depth of 75 feet beneath the surface, together with all necessary and convenient rights to explore for, develop, produce, extract and take the same, subject to the express limitation that the foregoing exception and reservation shall not include any right of entry upon the surface of said land without the consent of the owner of the surface of said land.
- (37) As to sub-parcel 55: The deed dated June 22, 1908, recorded November 17, 1908, in Book "108" of Deeds, at page 601, executed by Joseph Goldsworthy, Richard Gauthier, Mary Sirard, Selina Dausse, Philomen McCarty, Frederick Wilkins and Frank Gauthier to Catherine Goldsworthy, which deed reserved to the present owners of the Christopher Columbus Quartz Mine Patented the mineral within the exterior boundary of that part of Christopher Columbus Quartz Mine hereby conveyed with the right to work and remove the same.

NOTE: The following 3 parcels comprise a portion of this exception:

- (a) The deed dated September 30, 1944, recorded February 23, 1945, in Book "94" of Official Records, Nevada County Records, at page 264, executed by Mary S. Austin to Myrtle Marsh, which deed excepted all portions of said real property situate more than 50 feet below the surface thereof, together with the right to work and mine the same below said depth and extract minerals therefrom, without disturbing the surface thereof.
- (b) The Quitclaim deed dated June 18, 1956, recorded June 26, 1956, in Book "222" of Official Records, Nevada County Records, at page 98, executed by Idaho Maryland Mines Corporation, a corporation, to Peter Zadra et ux, which deed conveyed surface to a depth of 75 feet.
- (c) Quitclaim deed dated June 18, 1956, recorded June 26, 1956, in Book "222" of Official Records, at page 100, executed by Idaho Maryland Mines Corporation, to Carl M. Richardson et ux, which deed conveyed the surface to a depth of 75 feet.
- (38) As to sub-parcel 55: That portion of the Christopher Columbus Treasury Lode Claim No. 225 as may overlap upon the Alpha Quartz Lode Mining Claim, Lot No. 66, Survey No. 711, in Section 25, Township 16 North, Range 8 East, M.D.M.
- (39) As to sub-parcels 1, 2, 3, 4, 5, 10, 13, 14 & 26: As set forth in Exhibit A in the deed dated August 3, 1959, recorded August 12, 1959, in Book "266" of Official Records, page 185, executed by Idaho Maryland Mines Corporation, a Nevada Corporation (Any mineral or subsurface thereunder not vesting in vestee herein) and more particularly set forth in Inter-County Title Co. companion Order No. 31340-A.

PARCEL No. 2: All minerals and mining rights 100 feet below the surface of Lots 2, 4A and 4B in Block 9, of the Townsite of East Grass Valley, as said lots and block are designated on the Official Map of the said Townsite of East Grass Valley, made by Samuel J. Alderman, in the year 1890, with the privilege of extracting such minerals without disturbing the surface.

EXCEPTING THE FOLLOWING: (a) That portion of said Lot 4B described as follows: Beginning at the most Westerly corner of said Lot 4B, at the intersection of the Northeasterly line of the Crown Point Patent (Lot 141), and the Southerly line of the Nevada County Narrow Gauge Railroad right of way; thence, true bearings, along the Southerly right of way line of said railroad on a curve to the left with a radius of 1834.60 feet to a fence corner which is located North 69° 48' East 92.97 feet from the point of beginning; thence South 16° 01' East 119.28 feet; thence South 2° 26' East 22.87 feet and thence South 13° 52' West 24.82 feet to a point on the Northeasterly line of said Lot 141, and thence along said Northeasterly line North 41° 39' West 173.31 feet to the place of beginning.

(b) The mineral rights of Frances Johns as described in the Judgment dated May 21, 1897, recorded March 22, 1933, in Book "15" of Official Records, page 499, wherein it is recited that said Frances Johns is the owner of that certain quartz mining claim and premises known as "Calumet Quartz Lode" with the right to work said lode beneath the surface of Lot 4-B, Block 9, East Grass Valley, from a point 35 feet beneath the surface of said lot downward.

PARCEL NO. 3: All minerals and mining rights 100 feet below the surface, with the privilege of extracting such minerals without disturbing the surface of: That portion of the Northeast quarter of the Southwest quarter of Section 26, in Township 16 North of Range 8 East, Mount Diablo Base and Meridian, described as follows:

Beginning at the Northwest corner of the Northeast quarter of the Southwest corner of said Section 26; thence, true bearings, South 1° 26' 30" East 320.50 feet along the West line of said Northeast quarter of Southwest quarter to the center of the Idaho Ditch (so-called); thence following the center of said Idaho Ditch the following courses and distances: South 82° 51' East 111.52 feet; North 82° 51' East 113.38 feet; North 89° 41' East 67.20 feet; North 56° 06' East 38.32 feet; North 61° 52' East 30.45 feet; North 10° 43' West 74.66 feet; North 9° 40' East 61.09 feet; North 39° 20' West 65.03 feet; North 24° 19' West 60.75 feet and North 3° 51' West 52.70 feet to a point on the North line of said Northeast quarter of Southwest quarter of said Section 26, and thence South 88° 35' West 283.73 feet along said North line to the place of beginning.

PARCEL NO. 4: The sub-surface below a depth of Seventy-five (75) feet beneath the surface of the West half (W1/2) of the Southwest quarter (SW1/4) of the Southeast quarter (SE1/4) of Section 30, in Township 16 North, Range 9 East, M.D.B. & M., as described in that certain deed dated September 15, 1949, recorded September 19, 1949, executed by Idaho Maryland Mines Corporation to Errol MacBoyle, in Book "140" of Official Records, page 427, Filing No. 3695, Nevada County Records.

PARCEL NO. 5: All the minerals, metal matter and rock contained under said premises with the right to extract at any time hereafter all the mineral, metal matter and rock contained under said property, from any depth up to and within 75 feet of the surface of said property, without disturbing the surface of the South half of the Southwest quarter (S1/2 of SW1/4) of Section 29 and the Southeast quarter of the Southeast quarter (SE1/4 of SE1/4) of Section 30, Township 16 North, Range 9 East, Mount Diablo Base and Meridian.

PARCEL NO. 6: All the mineral, metal matter and rock contained under said premises, with the right to extract at any time hereafter all the mineral, metal matter and rock contained under said property from any depth up to and within 75 feet of the surface of said property without disturbing the surface of the East half of the Northwest quarter of the Northeast quarter and East half of the North half of the Southwest quarter of the Northeast quarter of Section 31, Township 16 North, Range 9 East, M.D.B. & M., as excepted and reserved in the Deed dated July 22, 1954,

recorded July 30, 1954, in Book "199" of Official Records, at page 10, Nevada County Records, File No. 9135, executed by Idaho Maryland Mines Corporation to John J. Looser.

PARCEL NO. 7: All oil, gas and minerals in and under and lying 100 feet below the surface of the North half of Lots 7 and 8 and the Lots 9 and 10 in Section 6, Township 15 North, Range 9 East, M.D.B. & M., and the East half of the Southeast quarter of Section 36, Township 16 North, Range 8 East, M.D.B. & M., together with the right at all times to enter on said lands and take all the usual, necessary or convenient means to bore wells, make excavations and to remove all the oil, gas and minerals found thereon, subject to certain conditions regarding protection and compensation for damage to growing crops and improvements, etc., all as described in the deed dated June 8, 1935, recorded October 21, 1935, in Book "28" of Official Records, page 168, executed by California Lands Inc., a corporation, to Bank of America National Trust and Savings Association, a national banking association.

EXCEPTING THEREFROM those certain portions thereof lying within the exterior boundaries of the lands hereafter described:

HOWEVER, VESTING IN THE NAME OF THE VESTEE HEREIN, THE MINERALS OR SUB-SURFACE underlying such portions as are set forth in the following:

(a) The Quitclaim Deed dated September 17, 1957, recorded September 24, 1959, in Book "268" of Official Nevada County Records, at page 182, executed by Idaho Maryland Mines Corporation, a Nevada Corporation, which deed excepted all minerals, gas, oil and mineral deposits of every kind and nature located below a depth of 100 feet beneath the surface of said property.

(b) The Quitclaim Deed dated April 13, 1961, recorded June 13, 1961, in Book "298" of Official Nevada County Records, at page 429, executed by Idaho Maryland Industries, Inc., to Charles F. Burnham et ux, which deed excepted the mineral situate more than 100 feet below the surface thereof, together with the right to work and mine the said property below said depth and remove minerals therefrom without disturbing the surface thereof.

Parcel No. 8: An undivided 3/5<sup>th</sup> interest in and to the minerals below a depth of 100 feet of the surface of a portion of Lot 46 on Survey No. 283, known as the Biggs Placer Mining Claim, embracing a portion of Sections 35 and 36, Township 16 North, Range 8 East, M.D.B.&M., and of Section 1, Township 15 North, Range 8 East, M.D.M. described as follows, to-wit:

Commencing at the Northeast corner of said Section 1, Township 15 North, Range 8 East, M.D.B.&M., thence with true bearings along the Northwesterly line of the "LeDuc Ranch" South 51° 53' West 1745.70 feet to a corner thereof; thence along the Southwesterly line of said ranch, South 22° 43' East 1320.00 feet to a Southerly corner thereof; thence along the Southerly line of said ranch, South 88° 13' East 792.00 feet to a corner thereof; thence along the Westerly line of said Wilson Ranch, South 1° 47' West 1275.84 feet to a corner thereof; thence along a Northerly line of said Wilson Ranch and along the Northerly lines of Gold Pick Extension Lode as the same is described in Book "32" of Mining Claims, at page 158, Nevada County Records, and of Golden Lead Lode Claim, Survey No. 5190, as the same is described in that certain Patent recorded in Book "4" of Patents, at page 612, Nevada County Records, and of Nesquehoning Mining Claim, Survey No. 4931, as the same is described in that certain Patent recorded in Book "4" of Patents, at page 493, Nevada County Records, South 88° 13' West 401.30 feet and South 89° 00' West 925.56 feet to the most Southerly corner of Electrum Mining Claim, Survey No. 4302, as the same is described in that certain Patent recorded in Book "4" of Patents, at page 383, Nevada County Records; thence North 0° 27' West 1279.54 feet to corner No. 8 of said Electrum Lode, Survey No. 4302, 1318.54 feet to a corner of said Electrum Lode; thence North 25° 58' 55" West 2199.11 feet along the Northeasterly lines of said Electrum Lode and of Biggs and Sims Quartz Mine, Lot 52, as the same is described in that certain Patent of record in Book "2" of Patents, at page 137, Nevada County Records, to a corner of said Biggs & Sims Lode, being also a corner of

the Sebastopol Quartz Lode Mining Claim, Lots 38 and 44; thence along the Northeasterly line of said Sebastopol Quartz Lode Mining Claim as the same is described in that certain Patent of record in Book "2" of Patents, at page 646, Nevada County Records, North 56° 02' West 805.23 feet to the most Southerly corner of Old Houston Hill Location; thence along the Southerly line thereof, North 60° 50' East 79.91 feet to the most Easterly corner thereof; thence along the Easterly line thereof, the following successive courses and distances, to wit: North 0° 17' West 75.29 feet, North 26° 54' West 1159.10 feet to the Northwest corner of the Southeast quarter of the Southeast quarter of Section 35, Township 16 North, Range 8 East, M.D.B.&M., being a Southerly corner of that certain tract of land described as Parcel No. 1 in the deed recorded in Book "92" of Official Records, at page 451, H.L. Brittan, et ux to Ernest Rhoads, et ux; thence along the Northerly line of said Southeast quarter of the Southeast quarter of Section 35 and along the Northerly line of the Southwest quarter of the Southwest quarter of Section 36, being also the Southerly lines of said Rhoads property as the same is described in said Book "92" of Official Records, at page 451, and of that certain tract of land described in the deed recorded in Book "86" of Official Records, at page 81, executed by C.W. Courtney et ux to George Crofoot, et ux and of the property of Anna C.H. Feldmann North 88° 52' 45" East 1979.00 feet to a point in said Northerly line of the Southwest quarter of the Southwest quarter of Section 36, being the Southerly line of the property of Anna C.H. Feldmann, thence leaving said Line South 1° 47' East 660.00 feet; thence North 88° 52' 45" East 661.00 feet to a point in the Westerly line of the Southeast quarter of the Southwest quarter of said Section 36, being the property of Mollie Lucas and Elizabeth Lucas Werner; thence along said Westerly line the Southeast quarter of the Southwest quarter of Section 36, South 1° 47' East 673.68 feet to the Southwest corner of said Southeast quarter of the Southwest quarter of Section 36, being located in the Section line common to said Section 36, Township 16 North, Range 8 East, and Section 1, Township 15 North, Range 8 East, M.D.B.&M., thence along said common Section line, North 89° 12' East 854.04 feet to the place of beginning,

EXCEPTING THEREFROM (a) portion of that certain parcel of land as conveyed by the deed dated October 30, 1885, recorded November 2, 1885, in Book "67" of Deeds, at page 136 et seq., executed by Michael McGuire and Alexander Sims, Jr., to Orleans Mining Company, described as follows: Beginning at the Northwest corner of the Southeast quarter of the Southwest quarter of Section 35, Township 16 North, Range 8 East, M.D.B.&M., and running thence South along the line of the Biggs and Sims Placer Mine (Patented), to a stake on the line South eight chains and fifty-five links; thence South 52° East six chains and twenty-four links to a post; thence South 17 ½° East, five chains and thirty links to a post; thence South 56 ¼° East, One hundred and twenty-six links to a stake; thence North, Ninety-one links to the South post of the old Houston Hill location; thence North One hundred feet to a post; thence Northwesterly on a true line to the point of beginning, the whole of the portion of land so bounded being included under the United States Patent of the Biggs and Sims Placer Mine, and containing about 7 acres.

(b) All that certain portion of said Biggs Placer Mining Claim lying in Section 1, Township 15 North, Range 8 East, M.D.M.

Parcel No. 9: An undivided 3/10<sup>th</sup> interest in and to All the gold and gold bearing earth and rock and all precious metals, contained in the NW1/4 of the SW1/4 of Section 36 and the NE1/4 of the SE1/4 of Section 35, Township 16 North, Range 8 East, Mt. Diablo Base and Meridian, with the right to enter upon any portion of said premises lying south of the Ophir Ditch. Said parties of the second part may work or mine in any manner the said portion lying south of said Ophir Ditch, they paying to the party of the first part the amount of damage they may do to any timber thereon, and said parties of the second part may work the balance of said premises by means of drifting only, by means of tunnels, commencing in the said portion below the ditch or elsewhere, provided the same be commenced outside of the exterior boundaries of the balance of said premises. Said parties of the second do not hereby obtain the right to sluice or hydraulic away any of said premises South of the said Ophir Ditch now enclosed, as described in the deed dated July 3<sup>rd</sup>, 1879, recorded July 3, 1879, in Book 56 of Deeds, at page 300 et seq., executed by Augustin



Ducotey to William Biggs, Michael Maguire and Chas. W. Kitts, administrator of the estate of Phillip W. Roberts, deceased.

EXCEPTING THEREFROM the surface and subsurface to a depth of 100 feet below the present surface.

Parcel No. 10: An undivided 9/35<sup>th</sup> interest in and to all the gold and gold bearing rock and earth and all the precious minerals, contained in the Southeast quarter of the Southeast quarter and the Southwest quarter of the Southeast quarter of Section 36, Township 16 North, Range 8 East, according to the United Survey, the said land being situated in Grass Valley Township, County of Nevada, and State of California, and also the right to enter in and upon said land and every part and parcel thereof for the purpose of mining thereon and extracting and taking away said precious minerals, rock and earth from the same, provided however, that the said parties of the second part shall not ground sluice said land nor any part thereof, nor break nor disturb the surface thereof, except so far as may be actually necessary in sinking shafts or running tunnels, etc., and all shafts or prospecting holes that may be sunk upon said ground, without reaching any pay earth, gravel or quartz rock and for that reason abandoned shall be filled by the said parties of the second part at their sole cost and expenses, as soon as practicable, as described in the deed dated December 31, 1869, recorded January 10, 1870, in Book 35 of Deeds, at page 156 et seq., executed by David Bower to P.W. Roberts, A.B. Brady, William Biggs, W.J. Tilley, C.R. Edwards and Michael Maguire.

EXCEPTING THEREFROM the surface and subsurface to a depth of 100 feet below the present surface.

TOGETHER WITH all of the grantor's right, title and interest in and to any personal property, rights of way, water lines, power lines, and poles of any nature whatsoever located upon the property as herinabove described, and/or appurtenant thereto.

TOGETHER WITH all of the grantor's right, title and interest in and to any real property, both surface and mineral rights, located in Nevada County, California.

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# EMGOLD MINING CORPORATION

## TECHNICAL REPORT

### APPENDIX B

### PERMIT DEFINITIONS

## APPENDIX B Regulatory Framework – State of California

The following environmental laws are applicable to the proposed project: the California Environmental Quality Act (CEQA, 1970), Surface Mining and Reclamation Act (SMARA, 1975), Clean Water Act (CWA, 1972), and Clean Air Act (CAA, 1972). These laws and their respective purposes are described below; their application to the proposed project is described in Section 3.

### a) CEQA

The CEQA is regarded as the foundation of environmental law and policy in California and it was fashioned after the National Environmental Policy Act (NEPA); both became law in 1970. CEQA applies to all discretionary activities proposed to be carried out or approved by California public agencies, including state, regional, county and local agencies, unless an exemption applies. CEQA applies to private activities that require discretionary governmental approvals. The objectives of CEQA are to:

- Disclose to decision makers and the public the significant environmental effects of a proposed development;
- Identify ways to avoid or reduce environmental damage;
- Prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures;
- Disclose to the public the reasons for agency approval of projects with significant environmental effects;
- Promote interagency coordination in the review of proposed developments; and
- Enhance public participation in the planning process.

In addition to encouraging the protection of the environment, CEQA also encourages agencies to implement CEQA in an efficient and streamlined manner through policies that require them, among others, to:

- Integrate CEQA with other planning and environmental laws to encourage concurrent review and processing;
- Organize and write environmental documents to make them useful to decision makers and the public;
- Omit unnecessary project descriptions and emphasize feasible alternatives and mitigation measures; and
- Make decisions that are informed and balanced and not use CEQA as an instrument for the oppression and delay of social, economic, or recreational development or advancement.

CEQA also authorizes regulatory agencies to:

- Require changes in a project to lessen or avoid significant effects, when feasible;
- Disapprove a project to avoid significant effects;
- Approve a project with significant effects if there is no feasible way to lessen or avoid the significant effects and the project's benefits outweigh these effects; and
- Impose fees on project applicants for CEQA implementation.

There are procedural and substantive requirements set forth in CEQA. The principal premise on which CEQA is based on that environmental protection can be achieved through compliance with rigorous and action-forcing procedures. Those procedures are implemented through the application of specific timing requirements and are summarized in Section 5. For regulatory agencies to comply with the substantive requirements they must take actions that result in avoided or minimized environmental damage when feasible (CEQA Deskbook, 2000).

Many agencies and groups may be involved in the CEQA process, including those listed below:

- Lead Agency: the governmental agency that has the principal responsibility for carrying out or approving the project;
- Responsible Agency: an agency other than the lead agency that has a legal responsibility for also carrying out or approving a project;
- Trustee Agencies: an agency that has jurisdiction over certain resources held in trust for the people of California but do not have legal authority for carrying out the project (e.g., California Department of Fish and Game);
- Agencies with Jurisdiction by Law: a jurisdictional agency such as a city or county that borders on that within which the project is located;
- Concerned Citizens and Organizations;
- Project Applicants;
- Environmental Consultants; and
- Courts.

Although the number of people and agencies involved in a project may appear large, advance project scoping and planning with these stakeholders are the keys to a project's success under CEQA.

Typically, when a Lead Agency is notified of a project, either by becoming involved at the outset of its planning with the developer or receipt of a development or "use" permit application, the CEQA process is initiated with consideration of the proposed project's environmental characteristics. Such consideration typically results in the project being assigned to one of three CEQA paths: Categorical Exemption, Initial Study/Negative Declaration or Initial Study/EIR. Because the proposed EMGOLD project involves reopening a mine that has been inactive for approximately 50 years for which minimal reclamation, if any, has been performed, an EIR will most likely be required under CEQA.

#### b) SMARA

The SMARA was enacted in 1975 to respond to the need for a continuing supply of mineral resources, while preventing damage from mining activities to public health, property and the environment. The California Department of Conservation's Office of Mine Reclamation (OMR) and the State Mining and Geology Board (SMGB) are jointly responsible for ensuring the administration of SMARA. In the CEQA process, the OMR and SMGB are Responsible Agencies and would collaborate with the Lead Agency to address environmental aspects of the proposed project. The SMGB may promulgate regulations to clarify and interpret SMARA provisions and also serves as a policy and appeals board. The OMR provides: ongoing technical assistance for lead agencies and

mine operators, maintains a database of mine locations and operational information statewide, and is responsible for compliance-related matters.

Anyone, including government agencies, engaged in any of the following activities are subject to SMARA: prospecting and exploratory activities, dredging and quarrying, streambed skimming, borrow pitting, and stockpiling of mined materials. Typically, there are two exemptions to SMARA: surface mining that is less than 1000 yd<sup>3</sup> and/or involves less than 1 acre of land.

The key to SMARA implementation is local (e.g., city or county) control whereby a municipal government may become a lead agency in SMARA administration by adopting a zoning ordinance that provides a SMARA-consistent regulatory framework within which mining and reclamation activities are performed. The local ordinances are then certified by the SMGB as meeting the minimum state requirements for mining activities, however, a lead agency may adopt additional, more restrictive requirements when deemed necessary to ensure effective reclamation that addresses local conditions. There are approximately 125 such “lead agencies” in California. In the absence of a certified lead agency, the SMGB may review and approve reclamation plans.

Mining may begin after the lead agency approves the mining permit and a plan for returning the land to a usable condition; this plan is referred to as a reclamation plan and is required for surface and subsurface mining operations. In addition, a prerequisite to mining activities commencing is the applicant’s acquisition of financial assurances to guarantee costs of reclamation (e.g., surety bonds, irrevocable letters of credit or trust funds). Annual reporting to both the State and the lead agency on the status of mining and reclamation activities, annual updates of financial assurances and annual inspections are required. Upon completion of mining activities, in accordance with the approved reclamation plan and relevant permit conditions, mining operators return lands to a second productive use such as: open space, wildlife habitat, or preparing the land for industrial or commercial uses. (Mining in California, An Introduction to the Reclamation Provisions of the Surface Mining and Reclamation Act, 2002).

Because the proposed EMGOLD project involves reopening a mine that has been inactive for approximately 50 years for which minimal reclamation, if any, has been performed, a reclamation plan will need to be prepared for the project in accordance with SMARA. In addition, plans to perform exploratory surface or subsurface mining and stockpiling that involve greater than 1000 yd<sup>3</sup> of material and/or involves more than 1 acre of land will need to be prepared. These mine and reclamation plans to be prepared in accordance with SMARA will become integral to the CEQA process.

#### c) CWA

The 1972 Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), was enacted to restore and maintain the quality of the nation’s waterways. In 1987, the Water Quality Act was promulgated and added provisions to the CWA that allowed the U.S. Environmental Protection Agency (EPA) to govern storm water discharges from construction sites. In 1998, the EPA published the final notice for National Pollution Discharge Elimination System (NPDES) General Permits for Storm Water Discharges from Construction Activities Disturbing 5 acres or Greater (Federal Register 7898, February 14, 1998).

The General Permit includes provisions for development of a Storm Water Pollution Prevention Plan (SWPPP) to maximize the potential benefits of pollution prevention and sediment and erosion control measures at construction sites. The General Permits for such activities are known as Phase I Construction Permits, since the adoption of the Phase II Final Rule in October, 1999 that created the Phase II permits. The Phase II Final Rule establishes General Permit requirements and best management practices for projects where between one and five acres of land area is affected by construction activities that will become effective in March 10, 2003, three months after the General Permit is expected to be approved by the California State Water Resources Control Board (SWRCB), the local administering agency of the CWA.

The Central Valley Regional Water Quality Control Board (CVRWQCB) would become a Responsible Agency and collaborate with the Lead Agency on matters related to NPDES, SWPPP and mine dewatering/other water quality issues associated with the proposed project. The planned surface activities (exploratory mining and stockpiling) for areas greater than 1 acre will be subject to the NPDES and SWPPP processes to ensure that they are performed in a manner that is protective of Wolf Creek. The City of Grass Valley and/or the County of Nevada would become the Responsible Agency for the NPDES and SWPPP and may be overseen by the (CVRWQCB) for enforcement.

d) CAA

The Federal Clean Air Act (CAA) was first passed in 1970 to improve the air quality in the United States and has been amended in 1990 and 1997 to set limits on the discharges of certain pollutants. Although the EPA is responsible for administering the CAA, the law recognizes that its implementation is best accomplished at the state and local levels. Each state is required to develop State Implementation Plans (SIPs) for EPA approval that set forth how the CAA provisions will be enforced in a manner that addresses the requirements of local industries, geography, housing patterns, etc. The EPA can take over the enforcement of the CAA should an SIP be found to be unacceptable.

One of the changes in the 1990 CAA amendments was the establishment of a permit program for larger stationary or non-point sources that release pollutants into the air. These can include cars, trucks, other motor vehicles, consumer products and machines used in industry. Approximately 35 states have permit programs for air pollution; California is among them. A permit application includes information about the pollutants that will be released (e.g., dust, volatile organic compounds, etc.), how much of a pollutant may be released, and what kinds mitigation the project proponent will take to reduce the pollutants to be emitted, and plans to monitor the emissions. The administering agency for the CAA compliance process for the proposed project is the Northern Sierra Air Quality Management District (NSAQMD) located in Grass Valley, California. The NSAQMD would be a Responsible Agency and collaborate with the Lead Agency on matters related to emissions that may be generated from mining operations.

d) Summary

CEQA and SMARA processes are pivotal to the permit process. As there are exploratory activities and stockpiling of mined materials envisioned for the project, these activities and the necessity to plan for the mine's reclamation require that SMARA be addressed

in the permitting and CEQA processes. The CWA, CAA issues can be fully addressed in the context of the CEQA analysis but may require that individual permits for certain mine operations be obtained from the Administering Agency. The General Plan and Zoning Designation Amendments can also be addressed in the Land Use section of the CEQA document although may require a separate administrative process to complete the permit process. The CEQA document can serve as the project description for the General Plan Amendment, Zoning Designation Amendment, as well as the LAFCo process. However, the LAFCo process is the last step in the permit process cycle and will occur after the CEQA process is completed.



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### APPENDIX C MINERALIZATION PHOTOGRAPHS





# EMGOLD MINING CORPORATION

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*Photo #1 Brunswick-style, steep-dipping vein with hanging wall stringer vein array; Brunswick 1450 level, Brunswick 30 Vein near junction with 31 Vein. (1948)*

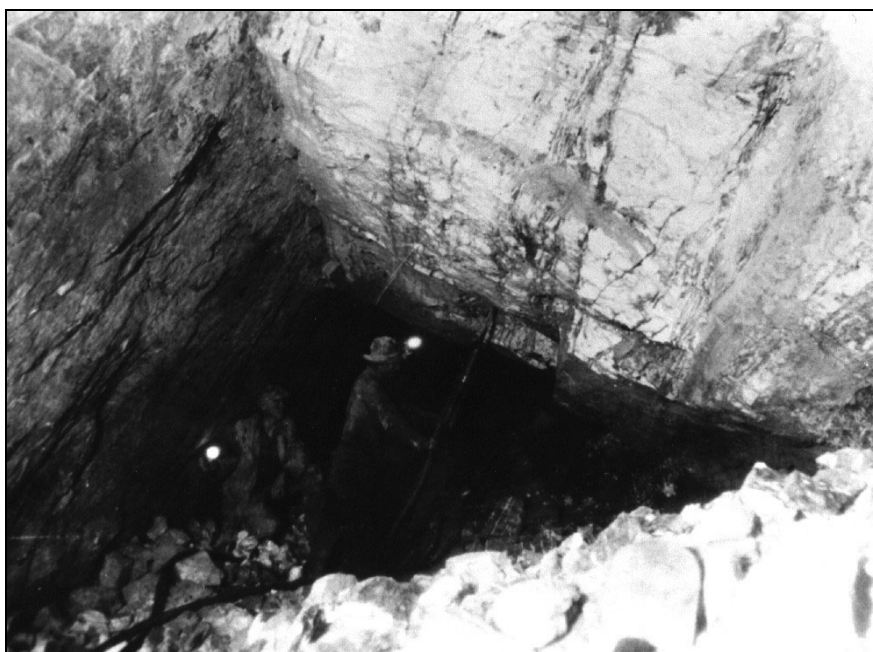


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*Photo #2 The very high-grade apex of an ore shoot. A zone of frozen gold-bearing stringers extends horizontally into the footwall at the apex of a steep vein ore shoot. Brunswick 16 Vein, Brunswick 580 level. (late 1930s)*



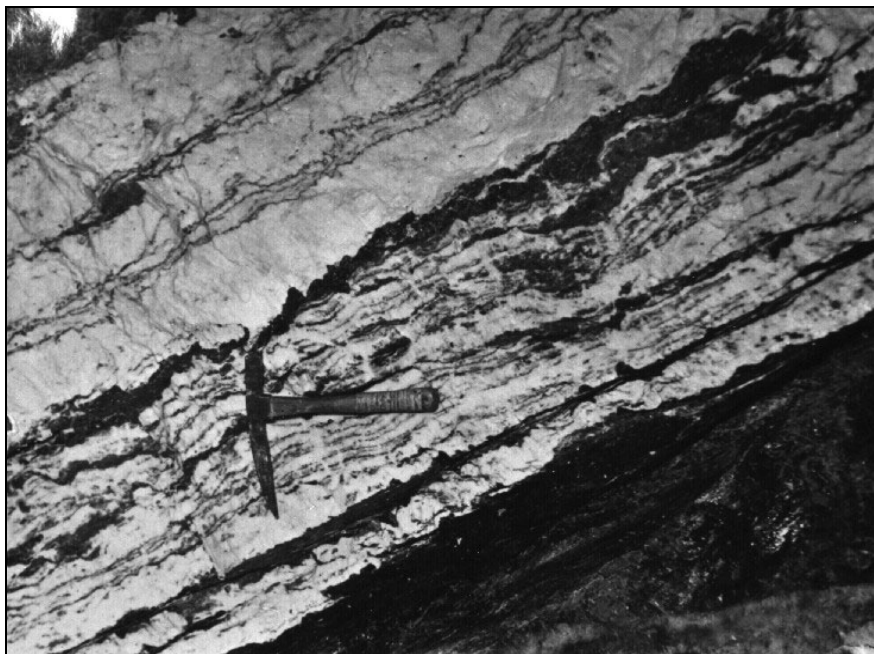
*Photo #3 Slope on 14 ft width of ribboned quartz, Idaho 1200 level, Idaho 3 Vein. (1935)*





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*Photo #4 Strongly ribboned Idaho 5 Vein with the slip plane of the L-Fault at the hanging wall. Idaho 2140 level. (1940)*

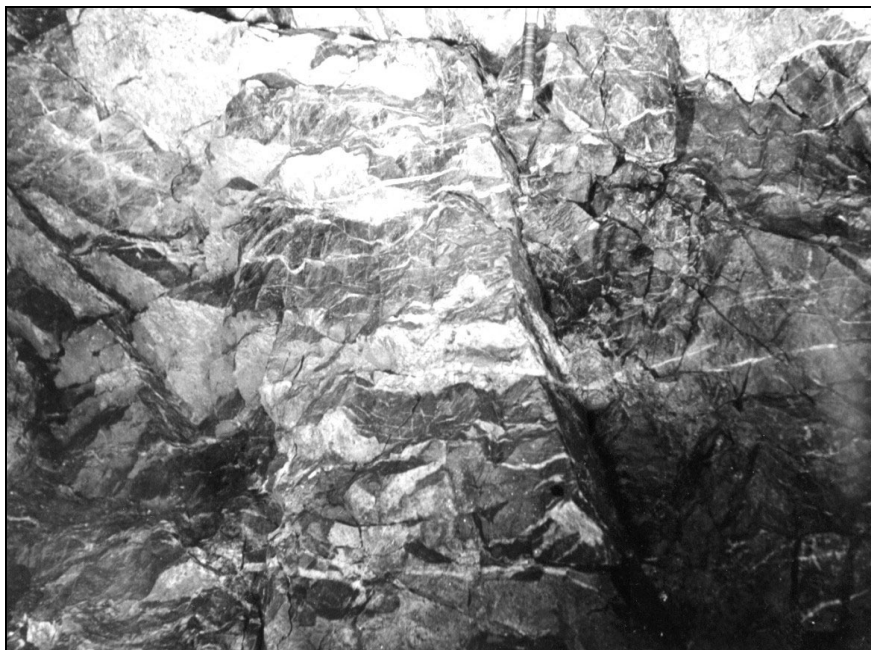


*Photo #5 Large stockwork veined body at the junction of the shallow-dipping Brunswick 4 Vein and 31 Vein. Brunswick 31 Vein drift on the right and exploration crosscut on the left. (1948)*



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*Photo #6 Replacement-style free gold mineralization in a diabasic slab. Idaho 21 zone, Idaho 1600 level. (1938)*





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*Photo #7 Glen Waterman, mine geologist 1941, posing with free gold mineralization in mineralized, ankerite-altered serpentinite and thin central quartz vein. Idaho 23 Vein, Idaho 2000 level.*