



EMGOLD MINING CORPORATION

IDAHO - MARYLAND TECHNICAL REPORT

10.0 EXPLORATION

Exploration at the Idaho-Maryland project has consisted of an extensive geologic evaluation program during 1994 through to 2002, surface diamond drilling during 2003 and 2004, surface mapping and sampling in (and since) 2004, and continued computerization of historic data.

The geologic evaluation was possible because of the excellent and comprehensive preservation of the Idaho-Maryland mine and mill records. These records are 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.

Surface diamond drill programs were executed in 2003 and 2004 to test the structural geologic model and near surface gold mineralization targets, and in 2004 for access ramp geotechnical information and ceramics feedstock confirmation. The drill programs and results are discussed in Section 11.

Surface mapping and sampling conducted in 2004 consisted of a traverse over the meta-volcanic and intrusive units that comprise the Brunswick slab in support of the ceramics feedstock resource estimate. This task also produced additional information on rock types within the slab for use in geologic modeling.

10.1 Data

The available key historic data consisted of:

- 3,200 mine maps and drawings, including 1,257 linen maps (1" = 50 ft assay plans, geology plans and stope plans, 1" = 100 ft geologic cross sections), including exploration drill hole geology and assays plotted on maps.
- 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



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- mill production reports and cost summaries for 1934 to 1956.
- petrographic studies of 70 wallrock and gold mineralized samples.

Since 2002 major components of the geological effort and exploration completed by Emgold have been the evaluation and interpretation of the main underground levels, winzes and quartz veins that were measured and input into a 3-D wireframe computer model using Vulcan® and MineSight®.

10.2 Data Review Results

Emgold evaluated the historic data and produced a comprehensive geological model for the Idaho-Maryland project. Key results previously developed by AMEC continue to be valid, and are:

- Barren blooms of intense carbonate-sericite-chlorite alteration leakage extend for several hundred feet upward from all of the known, large, high-grade oreshoots developed at the Idaho-Maryland mine. However, the ankerite rock unit associates with mineralization.
- The recognition of tectonic fragments or slabs within the Spring Hill Tectonic Mélange to explain location, arrangement, and variability in strike and dip 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 contact.
- Definition of the L Fault as the north boundary of the Idaho-Deformation Corridor, generator of numerous, blind high-grade oreshoots which branch downward into the hanging wall, and the possible connection at depth of the L Fault and projected north contact of the deep Fulton Slab.
- Development of productive, high-grade gold-quartz vein sets in bowtie arrays at and adjacent to bench dislocations in the Brunswick Slab contact.
- 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



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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 in association with bench-like dislocations along the meta-volcanic Brunswick Slab-serpentinite mélange matrix contact

The Idaho-Maryland geologic model was reviewed by Stephen Juras, Qualified Person for AMEC, in 2002 and again in 2004, who felt it would be valuable for exploration success. He indicated that multiple drillhole programs would be necessary because of the complex geology and variable geometry of the mineralized veins.

Exploration targets and the potential for new discoveries at the Idaho-Maryland project can be divided into seven large groups according to the dominant structure controlling mineralization. Those structural features, listed in order of decreasing importance, are: (1) the Idaho Deformation Corridor, (2) large individual mélange slabs, (3) Weimar Fault, (4) Morehouse Fault, (5) Clipper Creek Thrust, (6) Golden Gate Antiform, and (7) the Grass Valley Fault. Each structural feature has specific targets in known veins and further conceptual geological targets.

10.3 Exploration After 2004

Further surface geologic mapping was conducted after disclosure of the 2004 AMEC report by Emgold geologists to identify rock types, explore for vein outcrops, and confirm fault locations. This resulted in the first updated geologic map of the property in 60 years. This updated mapping has been computerized to be used as part of the geologic model.

Since 2004 the historic assay database was computerized to use in geostatistical modeling and further delineation of mineralized zones. A stope model of the location and shape of historic stopes was also completed. These results will be utilized in the next phase of work along with the vein model, which is in progress but not yet complete.

Also since 2004, new gold exploration targets were delineated. These were exploration blocks that did not meet all the criteria to be qualified as resources but would be areas of potential exploration. A cutoff grade of 0.10 oz/ton Au was used to define these targets along with an understanding of the mineralized zone geology. These targets were identified from the historic assays and geologic map data. Some targets were extensions of veins on mine levels that were developed but not stoped, and others were from drillhole intercepts. A total of 512 individual exploration targets



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were identified on Idaho veins in and near existing mine workings from the Idaho 600 to the Idaho 2400 mine levels.