



# EMGOLD MINING CORPORATION

## TECHNICAL REPORT

### 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.