B.C. Mineral Deposit Profiles - Guidelines for Authors

Instructions to Authors

In keeping with the original USGS descriptions, the deposit profiles provide a concise overview for a deposit type that is as up-to-date as possible. The models should be based on information from all relevant deposits from around the world with special emphasis on those from British Columbia. The profile should be sufficient to describe the deposit anywhere in the world, however, we will be adding more information specific to British Columbia under the following headings - examples, tectonic setting, age of mineralization, comments, typical grade and tonnage, economic limitations, importance and references.

The deposit profiles are organized with a standard format (see Table 1 below). This will assist the reader in finding the relevant information. Please note that some headings are optional or may need to be modified to fit the deposit type. Delete any headings not used. The text for the profiles should be written using complete sentences where appropriate. Avoid using abbreviations, such as I.P. and B.C. In commodity lists and model names, use the element abbreviation (Cu, Au) rather than the complete word. For deposit types which produce minerals use the word (barite, gypsum) rather than the molecular formula. Some good examples of deposit profiles are H05, I01 and J02.

Please refer to the following guidelines for more information on the format for each heading. These are modified from an outline from Eckstrand (1984, page 3).

NAME: Descriptive names with the principal commodities are preferred and individual deposit names should be avoided, unless they provide for easy recognition by geologists. The commodities are the element or mineral names linked by hyphens (e.g. Cu-Pb-Zn-barite).

SYNONYM(S): Other geological names commonly used for this deposit type, for example Mississippi Valley type and Carbonate-hosted Pb-Zn. Remember if there are no synonyms, delete this heading. If there is only one synonym, delete the (s) in the heading.

COMMODITIES (BYPRODUCTS): The commodities listed first constitute the principal recovered products at one or more of the deposits. However, all commodities so listed are not necessarily recovered from all deposits of that type. Byproducts and byproduct commodities are listed in italics. For example the commodities for a sedex deposit would be listed Zn, Pb, Ag, barite (Cd, Cu, Sn).

EXAMPLES (British Columbia - Canada/International): Examples of the deposit type are an important part of the profile. Please use a specific deposit name in preference to the name of the district or region. As many as five examples from British Columbia should be included with their associated MINFILE number (e.g. Lawyers 094E 066). MINFILE is a provincial government digital database that contains systematic descriptions for more than 12,300 mineral occurrences with grade and tonnage values for many of the deposits. The MINFILE number starts with the NTS coordinates for relevant map sheet (094E) and ends with a unique number for each occurrence on that sheet (066). The editors will provide MINFILE numbers for all authors who do not work for the B.C. Geological Survey. Up to ten Canadian or foreign examples should be included and they will be typed in italics. The latter should be followed by the name of the country in brackets. For Canada and the United States, please insert the name of the province or state before the country name. For example, Nick (Yukon, Canada) or Carlin (Nevada, USA).

Please note that we would appreciate resource data for any deposits of the type described in the profile to assist us in generating grade and tonnage probability curves.

GEOLOGICAL CHARACTERISTICS

CAPSULE DESCRIPTION: A short description introducing the reader to the deposit type. Capsule descriptions usually emphasize the important minerals, deposit form and associated geological features.

TECTONIC SETTING(S): In USGS descriptions this heading has several meanings including regional structural setting or regional structural control. Typically this heading will be used to describe the generalized plate tectonic setting which can include reference to specific terranes in B.C. (e.g. oceanic terranes - Cache Creek). Note the following heading can be used to describe the regional and structural settings.

DEPOSITIONAL ENVIRONMENT / GEOLOGICAL SETTING: Descriptions of the depositional environment will typically include the associated geological events (e.g. marine turbidite deposition with basaltic pyroclastic activity, e.g. subaerial rhyolitic volcanic centres .....). The geological setting describes the broad scale setting of the deposit without explaining the tectonic setting.

AGE OF MINERALIZATION: The age of ore emplacement is given in the form of either absolute dates or geological eons, eras or periods. For some deposit types it may be necessary to express the age in terms relative to hostrocks or a structural control. If British Columbia has a more restricted age range for the deposit type this should be stated.

HOST/ASSOCIATED ROCK TYPES: A lithological description of the rocks which host, or are associated, with the ore.

DEPOSIT FORM: The typical geometrical shape of orebodies and their physical and structural relationship to wallrocks and associated rocks. Average dimensions in metric units should be included if possible.

TEXTURE/STRUCTURE: A description of the common textural features within the ore and any related structures.

ORE MINERALOGY (principal and subordinate): The principal ore minerals are listed first. Less abundant ore minerals follow in italics. Ore minerals present in small or trace amounts or that occur only in one or two deposits should be printed in italics and identified by adding a qualifier. For the convenience of the reader include all metallic minerals, such as pyrite and pyrrhotite, even though they can be considered gangue by strict definition. (e.g. chalcopyrite, sphalerite, pyrite, galena, tetrahedrite, minor pyrrhotite noted at deposits X and Y).

GANGUE MINERALOGY (principal and subordinate): The principal gangue minerals are listed first. Less abundant gangue minerals follow in italics. Gangue minerals present in small or trace amounts or that occur only in one or two deposits should be printed in italics and identified by adding a qualifier. (e.g. chlorite, quartz, sericite, carbonate, garnet at deposits X and Y).

ALTERATION MINERALOGY (principal and subordinate): List the alteration minerals in relative order of importance. Minerals present in subordinate amounts or only at one or two deposits should be

identified by adding a qualifier and printed in italics. The dimensions, zoning (if any) and relationship of the alteration to the ore deposit should be described.

WEATHERING: An optional section to be used to describe weathering characteristics important to ore formation or as exploration guides.

ORE CONTROLS: Review the pertinent features of ore genesis or controls on ore emplacement or deposition.

GENETIC MODEL: This is an optional section which can be used by the author to describe the current genetic models for the deposit type. As space is limited, the descriptions should be to the point.

ASSOCIATED DEPOSIT TYPES: A listing of deposit types that are genetically related to the deposit type being described. Spatial association in one or two districts is not usually enough to consider the deposit types being associated.

COMMENTS: This is the section for including any pertinent information, such as deposit subtypes or features of particular relevance to British Columbia, which are not covered by one of the other headings. Preferably less than five and no more than eight sentences.

EXPLORATION GUIDES

GEOCHEMICAL SIGNATURE: Geochemical elements and related methods which may be useful for the discovery of the deposits.

GEOPHYSICAL SIGNATURE: Geophysical methods which may be useful for the discovery of the deposits.

OTHER EXPLORATION GUIDES: An optional section to allow for any other exploration aids, such as geological vectors, metallotects, etc.

ECONOMIC FACTORS

GRADE AND TONNAGE: Indicate the typical size and grade of the deposit type using metric figures. The USGS Bulletin 1693 is a good source of data for some deposit types.

ECONOMIC LIMITATIONS: This is an optional section of particular relevance to industrial mineral deposits. The text should consider physical and chemical properties affecting end use, compositional and mechanical processing restrictions and distance limitations relating to transportation, processing and end use.

END USES: This is an optional section which is particularly suitable for industrial mineral deposits. List individual uses separated by commas; uses of minor importance should be in italics.

IMPORTANCE: The importance of the deposit type to British Columbia and in a global context as expressed in terms of consumption, production, reserves or potential. Please note that this is not the importance of the commodity itself.

REFERENCES

REFERENCES: Citations should be restricted to major papers or texts, with a special emphasis on overview articles. Please use the format required for the British Columbia Geological Survey's publication titled "Geological Fieldwork". See example below.

Webster, I.C.L. and Ray, G.E. (1991): Skarns in the Iskut River - Scud River Region, Northwest British Columbia (104B); in Geological Fieldwork 1990, B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1991-4, pages 245-253.

FIGURES: A schematic cross-section and/or plan view of a typical deposit showing the orebody and associated lithologies, structures, alteration, etc. would be a useful addition to the profile for the final comprehensive publication. These can be complimented by, or in some cases replaced by, a cross-section and plan of a specific deposit. For all deposits a figure depicting a generalized model might be the most helpful figure. The final publication will be able to accommodate up to four half-page figures.