

Alluvial and Primary Pt Mineralization in the Russian Far East-Alaska-Yukon-B.C. Area – Controls and Targets

Z. Kotowych¹, E. Spooner²

¹Earth Sciences, University of Toronto, Toronto, ON, Canada; ²Earth Sciences, University of Toronto, Toronto, ON, Canada

Abstract

There is an essential need to find alternative platinum resources given the developing political instability in South Africa. The Republic of South Africa accounts for ~77% of all global platinum production. The discovery of new, adequate grade platinum deposits would diversify platinum production globally, adding greater stability to future platinum markets.

Alluvial platinum production in the Russian Far East, Alaska, the Yukon and British Columbia is related to zoned Ural-Alaskan type mafic-ultramafic intrusions and can be partially used as a guide to primary mineralization. For example, the Alaska panhandle contains ~35 zoned complexes in a ~75 km wide belt, ~770 km long, one of which (Salt Chuck, Prince of Wales Island) has produced significant Pd. Connections may be drawn between alluvial platinum and grain morphology to suggest potential platinum-bearing source rocks. An analysis of geotectonic settings shows similarities within these areas, and a short summary of the potential high grade platinum zones is provided. The presence of indicator minerals and elements together with ore deposit models provides justification for good grade platinum mineralization to exist in the area. Specific target locations can be identified due to substantial geological information. These locations include Good News Bay/Red Mountain (Alaska), the Baimka River area (Russia), the Kondyor Massif (Russia), Burwash Creek (Yukon), the Wellgreen area (Yukon) and the Tulameen River area (British Columbia). Examples of identified hard-rock platinum mineralization are provided, with a detailed analysis and listing of structural/lithological/grade-dimensions-tonnage characteristics. Relationships are drawn between known current ore deposit models and geological evidence at the target areas of interest.