

**CHARACTERIZING OF VEIN QUARTZ
OCCURRENCES IN
SRI LANKA**

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by

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Abstract

This research focused on suggesting a suitable and more reliable model for vein quartz occurrence along Highland/Vijayan (H/V) boundary. Detailed studies that were conducted by the Geological Survey and Mines Bureau at well known vein quartz occurrences along the H/V boundary; Mahagama, Randeniya and Ilukpalessa were considered for this study.

Based on geological, textural and mineralogical data suggest of Randeniya that quartz veins bear evidence of single stage crystallization. Randeniya field observations are exhibits fast cooling history which can be occurred due to high temperature disparity of country rock and hot aqueous solution. In many instances, vein quartz ridges are mainly associated with part of outer calc-gneissic rim clearly visible in these locations.

Vein quartz occur as narrow concordant or discordant bodies as dykes, lenses, pods and veins in high-grade metamorphic rocks. In sense of geology extension of the vein quartz ridges are almost aligned to the strike direction of the regional geology. Field observations reveals that cross-cutting field relationship of large vein quartz deposits is hardly visible in Randeniya.

The flat nature of the 1-D resistivity curve over 1000 Ω m resistivity range is an indicative for subsurface extension of vein quartz occurrences. Two- D image profiling are used for interpret lateral extension of quartz. In order to most reliably assess the subsurface vertical extension of vein quartz core drilling was necessary for quantitative (depth of extension).

Dissimilarities of mode of the occurrence , cooling history and characterizing changes of vein quartz in Central Highland and H/V boundary is clearly distinguish to achieve a clue. Existing most acceptable model of vein quartz occurrence suggested pegmatitic origin, where quartz may have been separated from the hydrothermal solution at later stages of crystallization from magma. According to above explanation suggesting the presence of a root for each and every sporadic vein quartz occurrence is very improbable when the lateral extent of the studied deposits is taken in to consideration. This study and other previous studies on vein quartz lead to the conclusion that the subsurface extension of vein quartz is very limited although the main occurrence is bulk in appearance.