

## **Geochemistry of Jawa and Panchor granite: the most northern granitic bodies of the Boundary Range Batholith**

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**Abstract:** The Panchor and Jawa granites are two isolated granitic bodies located at the north of the Boundary Range Batholith. They consist of coarse, K-feldspar megacrystic, biotite hornblende granite with some incipient two-phase variation in the Jawa granite. Mineralogy of both Panchor and Jawa granites in decreasing abundance are K-feldspar, quartz, plagioclase, biotite, allanite, zircon, apatite and hornblende. Both granites show many I type feature such as (i) mafic minerals are invariably hornblende and biotite, (ii) muscovite, garnet and cordierite are absent, (iii) accessory minerals present include sphene, allanite and apatite (iv) monazite is not present, (v) sedimentary xenoliths are very rare and (vi) Na<sub>2</sub>O is greater than 3.2% in rocks with approximately 5% K<sub>2</sub>O. Both granites also show many geochemical differences, which suggests that they are made up of individual batches of melt. Both Panchor and Jawa granite magma seems to be controlled by different mineral proportion during magmatic fractionation, thus, the Panchor granite is controlled by K-feldspar and biotite whereas in the Jawa Granite, plagioclase and K-feldspar are important phases in magmatic evolution. However the continuous trend shown by the Jawa and Panchor granites and the other Boundary Range Granites in Rb/Sr vs SiO<sub>2</sub>, Sr vs CaO and P<sub>2</sub>O<sub>5</sub> vs SiO<sub>2</sub> diagrams suggest that a connection exists between all the rocks at some stage of their magmatic evolution.