

Provenances of the Middle Paleozoic –Mesozoic clastics in the southern part of the Prikolyma terrane (Verkhoyansk-Kolyma Orogen) based on U-Pb dating of detrital zircons

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Detrital zircons from the Upper-Middle Devonian sandstones group at the prominent peak at 390–406 Ma (Emsian-Eifelian). The source area for these youngest population possible is Uvyazka trachyte. Precambrian zircons group at two populations 1640–2080 and 2460–2800 Ma with possible source within metamorphic rocks of the Omolon terrane basement.

92% of zircon grains from the Carboniferous sandstones form peak at 346–348 Ma with subordinate populations of Proterozoic and Neoproterozoic in age. The potential sources for 346–348 Ma age zircons is Middle-Late Paleozoic volcanics of the Kedon Complex.

Two samples taken from rocks earlier considered as Late Carboniferous-Early Permian in age have more than 75% of detrital zircons are Late Jurassic (150–156 Ma) and Late Cretaceous (87–90 Ma) in age, with subordinate grains Silurian-Early Carboniferous (310–445 Ma) in age. Paleoproterozoic zircons (~1800–2200 Ma) are rare. This indicates that the studied rocks accumulated at the final stages of formation of the Okhotsk-Chukotka volcanic-plutonic belt. The likely source areas for the Late Jurassic zircons are volcanics of the Uyandina-Yasachnaya arc and granitoids of the Main batholith belt.

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