云南兰坪—思茅盆地勐野井钾盐矿床物质组分对成因的指示

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中文摘要:云南兰坪—思茅盆地勐野井钾盐矿床是我国目前唯一的古代固体钾盐矿床。长期以来一直认为该矿床为海源陆相成因，也有人提出成矿物质还有其他来源，但并未给出确证据。为了查明该矿床的物源及成因，本文采用XRD、ICP-MS、电子探针(EPMA)和显微镜等方法对云南江城勐野井钾盐矿床物质组分进行研究，并在此基础上，对矿床的成因进行探指出成矿物质来源于两个方面。一为海水。微量元素Br在勐野井组盐层中的均值为578×10-6，远大于200×10-6，指示海源；同时在底板扒沙河组石英砂岩中存在少量海相矿物——石。二为深部热液。勐野井组灰绿色泥岩中存在大量富含钴镍的黄铁矿；其次，盐层裂隙的充填物出现含钴镍的羟碳钴镍石；同时在扒沙河组砂岩中普遍见到含铜矿物——蓝铜矿和孔石等。由于该矿床地处强烈构造活动带，这些富含Cu、Co、Ni的矿物指示，Cu、Co、Ni等金属元素来源于深部热液。因此，云南勐野井钾盐矿床除海水提供成矿物质外，深部热液对床的形成提供了重要物源。

中文关键词:成因 深部热液 海水 勐野井钾盐矿床 云南兰坪—思茅盆地

Genesis of the Mengyejing Potash Deposit in Lanping-Simao Basin, Yunnan: Indication from t Components of the Deposit

Abstract:The Mengyejing potash deposit in Lanping-Simao Basin of Yunnan (MPDY) is an unique ancient solid potash deposit in China. For a long time, the deposit has be thought to be of continental sedimentary genesis with potassium derived from sea water. However, there are some researchers who hold that there existed other sources, b they have failed to present any evidence. In order to find out the source and origin of the deposit, the authors studied the component characteristics of the salt layer in Mengye Formation and its underlying Bashahe formation by XRD, ICP-MS, EPMA and microscopy in this paper, and pointed out that there existed two potassium sources for the depo The first was sea water because the average value of the trace element bromine (Br) in evaporates is 578×10-6 which is higher than 200×10-6, indicating Br came from se water. In addition, a small amount of marine mineral glauconite exists in quartz sandstone of lower Bashahe Formation. The second was deep hydrothermal solution, as evidenced by the existence of lots of pyrite rich in Co and Ni in grayish green mudstone of Mengyejing Formation. Furthermore, comblainite is one of the main mineral phase fracture filling in the salt layer, and azurite and malachite that contain copper minerals were found in quartz sandstone of Bashahe Formation. The elements of Cu, Co and N minerals were provided by deep hydrothermal solution because the deposit was located in strongly active tectonic belts. Therefore, deep hydrothermal solution also provide