

SANDSTONE TYPE URANIUM RESOURCES OF PAKISTAN: ENCOURAGING HUGE STRATA

M. Sadiq Malkani¹; M. Sufyan Qazi²; M. Raza Shah³ and Tehseen Zafar⁴

*¹Formerly with Geological Survey of Pakistan, C/O Post Office Retra, Tehsil Taunsa, District
D.G. Khan*

²National Centre of Excellence in Geology, University of Peshawar

³Department of Earth Sciences, CITT, Abbottabad Campus, Abbottabad

*⁴Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, Guizhou, PR China.
malkanims@yahoo.com*

Abstract

The uranium (and may be thorium and other radioactive minerals) may occurs primarily in the igneous rocks especially in the Chagai, western and northern Indus Suture, Khyber-Hazara, Kohistan-Ladakh, Karakoram and Hindukush blocks. As secondary mineral, it is found and at places enriched in the the foreland sedimentary fold and thrust belt (Indus Basin) and also in clastic sandstone of different ages because of porous and permeable nature. Possibly the main deposits of Uranium are present in the Dera Ghazi Khan and Taunsa areas with main localities like Baghalchur, Nangar Nai, Taunsa, Barthi, etc. In general cutoff grade of Uranium is 0.03% and maximum grade is 0.1%. So far known deposits of uranium in Pakistan are small to medium in size. Main sources of uranium are clastic formations. Radioactive minerals like primary minerls e.g. (Uraninite) and secondary mierals such as tyuyamunite, carnotite are commonly existed and enriched by water at places in cavities in Vihowa Group (Oligocene Chittarwata, Vihowa, Litra and Chaudhwanan formations) and may be hosted in coal and sandstone bearings formations. Fluviatile cross bedded sandstones of the Vihowa group host the uraniferrous placers. It is traced along 200 kms North-South oriented outcrop along the foot mountains of Sulaiman Range, in the territory of Dera Ghazi Khan, Rajan Pur and Dera Ismail Khan. Further south it extends to Dera Bugti, Kohlu and Sibbi districts and further north it extends to Kohat and Potwar basin. Uranium, thorium and **Iridium** anomalies expected in the KT boundary laterite, muds and coal in the Musakhel district areas like Gharwandi, Aram, Kingri, Vitakri, Fort Munro, Shirani and other areas of Vitakri Formation. Primary minerals like uraninite, coffinite, pitchblende are found below water table while secondary minerals like uranophane, metatyuyamunite, carnotite are found in the the oxidized environments/above water table hosted by Vihowa group in Sulaiman, Manchar/Vihowa group in Kirthar and Potwar group in Kohat and Potwar basins.