

Stratigraphy and economic geology of Dhana Sar-Mughal Kot-Domanda-Chaudhwan section, Zhob and D.I.Khan districts, Balochistan and Khyber Pakhtunkhwa provinces, Pakistan

S. I. Shaikh¹; M. S. Malkani²; N. Somro¹; A. Jahangir¹; M. I. Alyani³ and S. J. Arif¹

¹*Geological Survey of Pakistan, Sariab Road, Quetta, Pakistan*

²*Geological Survey of Pakistan, Muzaffarabad, Azad Kashmir, Pakistan*

³*Geological Survey of Pakistan, Lahore, Pakistan*

xhaikhxohaib@gmail.com

Abstract

Dhana Sar-Mughal Kot-Domanda-Chaudhwan section is located transversely on the eastern limb of Takht-e-Sulaiman anticlinorium. The axis of anticlinorium and strike of its strata is generally north south. Dhana Sar area is located on the core of anticlinorium under the territory of Zhob District, Balochistan Province while the Mughalkot, Domanda-Chaudhwan areas are located on the eastern limb of anticlinorium under the territory of D.I.Khan District, Khyber Pakhtunkhwa Province. The oldest core formations exposed in this section are Jurassic Sulaiman Group representing Loralai (thin to medium bedded limestone with minor shale) and Chiltan (thick bedded to massive limestones) formations. The exposed limb stratigraphy in ascending order is Early Cretaceous Parh group represents Sembar (mainly shale), Goru (marl and shale), and Parh (limestone with minor shale) formations, and Late Cretaceous Fort Munro group represents Mughal Kot (shale/mudstone, sandstone, marl and limestone), Fort Munro (limestone), Pab (sandstone with subordinate shale) and Vitakri (red muds and greyish white sandstone) formations. The following Paleocene Sangiali group represents Rakhi Gaj (Girdu member, glauconitic and hematitic sandstone; Bawata member, alternation of shale and sandstone), and Dungan (thick limestone with minor shale) formations; Early Eocene Chamalang (Ghazij) group represents Shaheed Ghat (shale), Toi (sandstone, shale, rubbly limestone and coal), Kingri (red shale/mud, grey and white sandstone) and Baska (gypsum beds and shale) formations, and Middle Eocene Kahan group represents Habib Rahi (limestone, marl and shale), Domanda (shale), Pir Koh (limestone, marl and shale) and Drazinda (shale) formations, Oligocene-Pliocene Vihowa group represents Chitarwata (grey ferruginous sandstone, conglomerate and mud), Vihowa (red ferruginous shale/mud, sandstone and conglomerate), Litra (greenish grey sandstone with subordinate conglomerate and mud), and Chaudhwan (mud, conglomerate and sandstone) formations, and Pleistocene-Holocene Sakhi Sarwar group represents Dada (well developed conglomerate with subordinate mud and sandstone) and Sakhi Sarwar Formation (poorly developed conglomerate with subordinate mud and sandstone, while in center of valleys the mud is dominant) concealed at places especially in the Chaudhwan valleys and plain areas by the Subrecent and Recent fluvial and eolian deposits. The significant mineral commodities found in this section are huge deposits of gypsum, very small coal deposits and petroleum seepage and huge cement resources and construction and building materials. The area consists of ideal places for cement industry installations and small dams for water storage.