

Lecture-14

Brief Introduction to Local Geology

Introduction to Local Geology

- Pakistan geologically overlaps both with the Indian and the Eurasian tectonic plates where its Sindh and Punjab provinces lie on the north-western corner of the Indian plate while Balochistan and most of the Khyber-Pakhtunkhwa lie within the Eurasian plate which mainly comprises the Iranian plateau, some parts of the Middle East and Central Asia. The northern areas and Azad Kashmir lie mainly along the edge of the Indian plate and hence are prone to violent earthquakes where the two tectonic plates collide.

Seismicity & Location of Faults

- Please refer to the lecture of Zoning Maps

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- Mining is an important industry in Pakistan. Pakistan has deposits of several mineral products including coal, copper, gold, chromite, mineral salt, bauxite and several other minerals. There are also a variety of precious and semi-precious minerals that are mined. These include peridot, aquamarine, topaz, ruby, emerald, rare-earth minerals bastnaesite and xenotime, sphene, tourmaline, and many varieties of quartz. The Salt Range in the Potwar Plateau has large deposits of rock salt. Pakistan has extensive mineral resources, including fairly sizable reserves of gypsum, limestone, chromites, iron ore, rock salt, silver, gold, precious stones, gems, marbles, tiles, copper, sulfur, fire clay and silica sand.
- The Pakistan Mineral Development Corporation is the responsible authority for the support and development of the mining industry. Gemstones Corporation of Pakistan looks after the interests of stake holders in gemstone mining and polishing as an official entity.
- Baluchistan province is the richest in mineral resources available in Pakistan. While recently coal deposits have been discovered in Thar, Sindh. Khyber Pakhtunkhwa is rich in gemstones. Most of the mineral gems found in Pakistan are found there.
- Apart from oil, gas and some mineral used in nuclear energy purposes which comes directly under federal control, mining of other minerals is provincial issue. Currently around 52 minerals, are mined and processed in Pakistan.

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Geological Survey of Pakistan (GSP) is an attached department of the Ministry of Energy (Petroleum Division), Government of Pakistan. It was established, at the time of independence in 1947, with only 5 Muslim geologists of the Geological Survey of India who opted for Pakistan. It is a national organization which, as per its charter, is primarily responsible for collection and dissemination of geological information about the country so that the earth's resources could be best exploited and utilized.

The geological information is compiled and disseminated in the form of geological reports and maps. Geological maps provide a bird's eye view of the surface (and subsurface) distribution of various types of rocks and economic minerals that are found in a particular region. These maps are, thus, essential for all future detailed geological works including, mineral exploration, civil engineering, soil surveys, land use and soil conservation projects. Worldwide experience suggests that geological maps on 1:50,000 scale provide the most useful information and meet the requirement of most of the demands.