Geoenvironmental factors evaluate the underground waters in the eastern desert of Egypt

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New areas of utilization had to be developed within the desert area where the underground water reservoir could be used. Therefore, selection of good localities for drilling new water wells suitable for human use and how to use the present water wells is very important in any planning and development. The aim of this paper is to ultimate the benefits of the water wells and delineate their risk. And intends to contribute in developing a suitable methodology for the founding good new water wells. In this study, we proposed the following geoenvironmental factors to ultimate the water wells availability and quality; i) Impact of the surrounded (host) rocks and the type of aquifer sediments. ii) Impact of mining and quarirs activities and mineralized body in the drained basin. iii) Impact of well´s situation in site of water flow in it's drained basin. Eastern Desert of Egypt occupies more than 230, 000 km^2. Hundred important water wells had selected in Eastern Desert to investigate the impact of suggested geoenvironmental factors. There are 96 gold mines in Eastern Desert, in spite of gold mining activities started in the Pre-Dynastic period of the Egyptian history (4000yearsBC) and continued up to the recent years. Besides ochre (iron oxides) and several Pb-Zn mines.

New geomorphological and drainage basin maps for Eastern Desert had been prepared using Landsat ETM images and revise the published geological and topographic maps. Correlation between the published chemical analyses of the underground water for 82 wells on one side and the host rock forming minerals, mining activities, position in the drained basin and the type of the aquifer on the other side.

Elements, when leached from mining wastes are concentrated in certain parts of a drainage basin by flash flood. And contaminate the underground water with elements both from the ore body and mining activities such as Pb, Zn, Cu, and Fe and dissolved materials are high content in these wells. The alkaline water found at the footslopes of syenite mountaines. Abundance from clay minerals in underground water found at granite and syenite terrain as a result of weathering of feldspars. This study monitored that the underground water analyses reflected the rock forming minerals and mining activities in it's surroundings. The aquifer type has considerable significance. There are good water from several wells regarding to these factors. This article elucidates that the proposed impact of the mentioned geoenvironmental factors is actually, the first attempt in the study of the subject in Egypt. Therefore, it is strongly advisable to perform an geoenvironmental impact assessment before starting any drilling for new water wells and before use the present wells and have to put in data base.

Gold and platinum group mineral at Bleïda Far West, Anti-Atlas, Morocco

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The Bou Azzer-El Graara inlier in the Anti-Atlas is well known for its Co-As deposits with gold as a by-product, and the abandoned Bleïda Cu deposit. Recent prospecting by Reminex led to the discovery of a significant gold-palladium mineralization some 7 km NW of the former Bleïda copper mine (-6.5173038, 30.3923419).

At Bleïda Far West, Au-Pd mineralization is hosted by hydrothermally altered amphibolites and chlorite schists. The mineralization occurs in a 7 by 5 km wide corridor, and is associated with intense silicification and numerous, narrow, quartz-dominated, carbonate-bearing veins. Close to surface, the mineralization is hosted in weathered, soft, clayey and powdery material rich in Mn- and Fe-oxides/hydroxides with visible gold.

The pristine mineralization is virtually sulfide-free. Gold (grains up to 400 μm in diameter) is associated with hematite, quartz, calcite, barite, epidote and chlorite. Individual gold grains and grains within individual samples are usually chemically homogeneous. The composition of gold analysed by EPMA (n = 82) ranges from 79 to 93 wt.% Au, 6 to 19 wt.% Ag, and 0.5 to 7 wt.% Pd. The gold grains are intergrown with a distinct suite of PGM, namely mertieite-I [$Pd_{5+x}(Sb,As)_{2-x}$], keithconnite [$Pd_{20}Te_7$], palladseite [$Pd_{17}Se_{15}$], and sperrylite [$PtAs_2$].

A genetic model on the genesis of the Bleida FW mineralization must bear in mind that the gold is associated with hematite and barite, not with sulfides. The combined geochemical and mineralogical evidence so far suggests a relatively low-temperature hydrothermal origin of the gold from oxidizing fluids, related to syn-tectonic quartz-diorite intrusions, or other, still imprecisely known events.