

Geology of subsheets S and Y of Bure map sheet (NC 37 - 5)

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ABSTRACT

Sub sheets S&Y of the Bure sheet are located in western Ethiopia in eastern Gojam zone. The area is underlain by precambrian metamorphic rocks together with the attendant intrusive rocks, paleozoic to mesozoic sedimentary rocks, and tertiary volcanic rocks.

The basement rocks are exposed mostly in southern part of sub sheet Y, and covering very small area in southwestern part of subsheet S. They are comprised of migmatized biotite amphibole gneiss, biotite gneiss, and granitic gneiss. These are intruded by diorites, late granites and pegmatites.

North-south running rifted channels within the basement are filled by clastic sedimentary rocks which consist of sandstone, shale, siltstone, and limestone of probable paleozoic age which over lie the basement unconformably. East-west running lower mesozoic sandstone over lie with imperceptible unconformity over the Paleozoic and at places it is underlain unconformably by the basement. It consists of thick succession of clastic sedimentary rocks consisting of sandstone, shale, siltstone, and mudstone, and occupying the upper part of subsheet Y, and lower part of subsheet S. However streams like Temcha expose them either at their lower or upper banks in most part of subsheet S. Tertiary basaltic flows cover almost entire area of subsheet S, and metamorphic and paleozoic rocks are not exposed in this part of the study area.

The basement rocks are the eastern part of the northern extension of the Mozambique belt and are part of the high grade rocks. They are affected by early deformation which produced S1 foliation and gneissosity banding, and late shearing and folding event. The prevailing regional metamorphism reached an upper amphibolite facies level during early deformation, but due to subsequent shearing and hydrothermal alteration, they were reduced to green schist facies level as evidenced by the development of typomorphic minerals, that are developed during D2 and D3 deformational events.

At present, the basalt can be used as construction material and as an aggregate in road making. The quartz rich lower part of the sandstone unit may be used as a possible raw material in the production of glass and ceramics after carrying out the necessary beneficiation