



INTRODUCTION

This map is a product that resulted from a project supported by the U.S. Agency for International Development (Participating Agency Service Agreement No. CON-0002-P-ID-3087-00) to conduct an evaluation of coal and other fossil fuels in the Republic of Armenia. The original map has been translated to English from Russian (Marlen Sattian, Academy of Sciences, Armenian Institute of Geological Sciences, written commun., 1994), digitized, and slightly modified in some areas. The original format has been modified to follow the U.S. Geological Survey's format. The map projection is not known. Latitude and longitude ties are approximately located.

CORRELATION OF MAP UNITS		MAP UNITS	
Qal	Quaternary	Qal	Alluvial deposits undivided (Quaternary)--Alluvium, proluvium, diluvial, glacial moraine and lake deposits. Deposits contain clay, sand, and gravel
Qtc		Qtc	Travertine and travertine conglomerate (Quaternary)
Qty		Qty	Tuff and ash-flow tuff of Yerevan-Gyumri (Quaternary)
Qc		Qc	Monogenic cinder cones and deposit (Quaternary)
Ql		Ql	Lava flows of intermediate composition (Quaternary)--Andesite and andesitic-dacitic lava flows
Qlf		Qlf	Lava flows, (Quaternary)--Basalt, andesite, andesitic-basaltic, and andesitic-dacitic lava flows
Qt		Qt	Terrace deposit (Quaternary)--Comprised of clay, sand, and gravel
Qv		Qv	Volcanic rocks (lower Quaternary)--Volcaniclastic deposits, basalt, andesite-basalt, andesite, and andesite-dacite lava flows. Deposits composed of tuffaceous sandstone and tuffaceous conglomerate
Tiz		Tiz	Volcanic deposits of Ickhansar and lava flows of Zangezur plateau (Pliocene)
Tsm		Pliocene	Tsm
Tds	Miocene?-Pliocene	Tds	Clay-diatomite deposit of Sissian (Miocene?-Pliocene)
Tvg		Tvg	Volcanic and volcaniclastic rocks of Goris (Miocene?-Pliocene)
Ts	Miocene	Ts	Sandstone, conglomerate, and clay (Miocene?-Pliocene)
Ti		Tva	Volcanic rocks of Armenian Highland (Tertiary)--Andesite, trachyandesite, andesite-dacite, dolerite-basalt lava flows, tuffs, tuffaceous conglomerate, and tuffaceous sandstone
Tva	Tertiary	Tab	Tuffs and ash-flow tuffs of Artik and Burakan (Tertiary)
Tab		Tl	Rhyolite, dacite, pumice, obsidian, and perlitite (Tertiary)
Tl	Oligocene-Miocene	Tgy	Gypsum-halite-bearing rocks near Yerevan region (Oligocene-Miocene)
Tgy		Tcc	Rocks of Chagalu-Chorakchpur (early-middle Oligocene)--Sandstone, and gypsiferous-bearing-clay
Td	late Oligocene	Tsy	Sedimentary rocks near Yerevan and Haktemberian (late Eocene-Miocene)--Composed of variegated units of sandstone, clay, and conglomerate
Tcc	early-middle Oligocene	Tv	Volcanic rocks (late Eocene-Oligocene)--Leucitic porphyry, trachyte, and optophyre trachyandesite lava flows and tuff
Tsy	late Eocene-Miocene	Tvn	Volcanic rocks of north Armenia (middle-late Eocene)--Porphyry, andesite, basalt, and dacite
Tv	late Eocene-early Oligocene	Tvc	Lava flows and ash-flow tuff of rhyolite-dacite composition
Tgd	late Eocene-early Oligocene	Tvc	Volcaniclastic and sedimentary rocks (middle-late Eocene)--Tuffaceous sandstone, tuff, sandstone, clay, and marl
Tgg		Tsd	Sedimentary rocks (Eocene)--Limestone, marl, and sandstone
Tp	middle-late Eocene	Tse	Sedimentary and volcanic rocks of east Haydzor-Zangezur (early-middle Eocene)
Tsq		Tav	Sedimentary and volcanic rocks (Paleocene-early Eocene)--Tuffaceous sandstone, sandstone, marl, porphyry, and tuff; locally contains coal beds
Tvn	Eocene	Tsh	Sedimentary rocks of Haydzor (Paleocene-early Eocene)--Sandstone, slate, marl, limestone, and basaltic conglomerate
Tvd		Tsr	Sedimentary rocks (Paleocene)--Sandstone, siltstone, marl, limestone, and conglomerate
Tsd	early-middle Eocene	Ksd	Sedimentary rocks (Late Cretaceous (Turonian-Cenomanian))--Carbonate and terrigenous deposited limestone, marl, sandstone siltstone, and conglomerate
Tsv		Key	Sedimentary and volcaniclastic rocks (Late Cretaceous (Cenomanian))--Sandstone, limestone, and tuffaceous sandstone
Tsh	Paleocene-early Eocene	Ka	Sedimentary and minor volcanic rocks (Early Cretaceous (Valanginian-Aptian))--Limestone, marl, sandstone, tuffaceous conglomerate, and porphyry
Tsr	Late Cretaceous-Eocene	JKs	Volcaniclastic and sedimentary rocks (Late Jurassic-Early Cretaceous (Oxfordian-Valanginian))--Porphyry, ash-flow tuff, tuffaceous conglomerate and sandstone, with minor limestone
TKg		Jld	Sedimentary rocks (Late Jurassic (Late Oxfordian-Early Kimmeridgian))--Limestone, dolomite, and quartzite
Ksd	Late Cretaceous	JKt	Sedimentary and volcaniclastic rocks (Late Jurassic (Oxfordian))--Tuffaceous conglomerate and limestone lenses
Ke		Jlc	Tuffaceous sandstone, shale, breccia, and porphyry (Middle Jurassic (Collovian))
JKs	Early Cretaceous	Jsh	Sedimentary deposit of South Haladzor (Middle Jurassic (Bathonian))--Limestone, marl, and conglomerate
JKg		Jc	Volcanic and volcaniclastic rocks (Middle Jurassic (Upper Bathonian))--Trachyte, ash-flow tuff, porphyry, and tuffaceous sandstone and conglomerate
Mg	Jurassic-Cretaceous?	Jp	Plagioclase, quartz, and quartz-plagioclase porphyry (Middle Jurassic (Middle-Upper Bajocian))
JKs	Mesozoic?	Jpv	Porphyry, volcanic and volcaniclastic rocks (Middle Jurassic (Middle-Upper Bajocian))--Quartz-plagioclase porphyry, ash-flow tuff, and tuffaceous sandstone; locally contains coal beds
Jld		Jvp	Volcanic and plagioclase-epidote porphyry rocks (Middle Jurassic (Upper Aalenian-Lower Bajocian))
Jl	Late Jurassic	Jec	Schist and conglomerate (Early-Middle Jurassic (Toarcian-Lower Aalenian))
Jlc		Rev	Terrigenous-carboniferous rocks of Vedi and dolomitic limestone of Haladzor (Triassic)
Jsh	Middle Jurassic	PI	Limestone and bituminous schist (Permian)
Jc		B	Upper Paleozoic rocks (Early-Middle Devonian and Pennsylvanian (Early Carboniferous))--Limestone, sandstone, schist, and quartzite
Jp	Early-Middle Jurassic	ZB	Proterozoic to Early Paleozoic rocks (Proterozoic-Early Paleozoic)--Schist, limestone, and marble. Volcanic rocks found locally at Zangezur
Jpy		PREDOMINATELY INTRUSIVE ROCKS	
Jvc	Triassic	Tl	Intrusive and extrusive rocks of acid and middle composition (Miocene)--Dacite, andesite-dacite, trachyrhyolite
Jec		Tg	Porphyritic granite, granodiorite, and monzonite (late Oligocene)
Rev	Permian	Tgd	Granodiorite, monzonite, granite, and diorite (late Eocene-early Oligocene)
PI		Tgg	Gabbro, gabbro-diorite, and pyroxenite (late Eocene-early Oligocene)
B	Early-Middle Devonian and Pennsylvanian Paleozoic?	Tp	Pseudoleucite, nepheline, and alkalic syenite (late Eocene-early Oligocene)
Bm		Tsq	Subvolcanic quartz porphyry, albite, and rhyolite-dacite (late Eocene)
ZB	Proterozoic-Early Paleozoic	TKg	Granite, granodiorite, diorite, gabbro, and albite (Late Cretaceous-Eocene)
		JKs	Ophiolite complex (Jurassic-Cretaceous?)--Gabbro-pyroxenite, peridotite, dunite, and serpentinite
		Mg	Leucocratic granite, migmatite, microcline granite,diorite, gabbro-diorite of Tsachkuniats region and granite-gneiss of south Zangezur region (Mesozoic?)
		Bm	Metamorphic complex (Paleozoic?)--Gabbro and pyroxenite