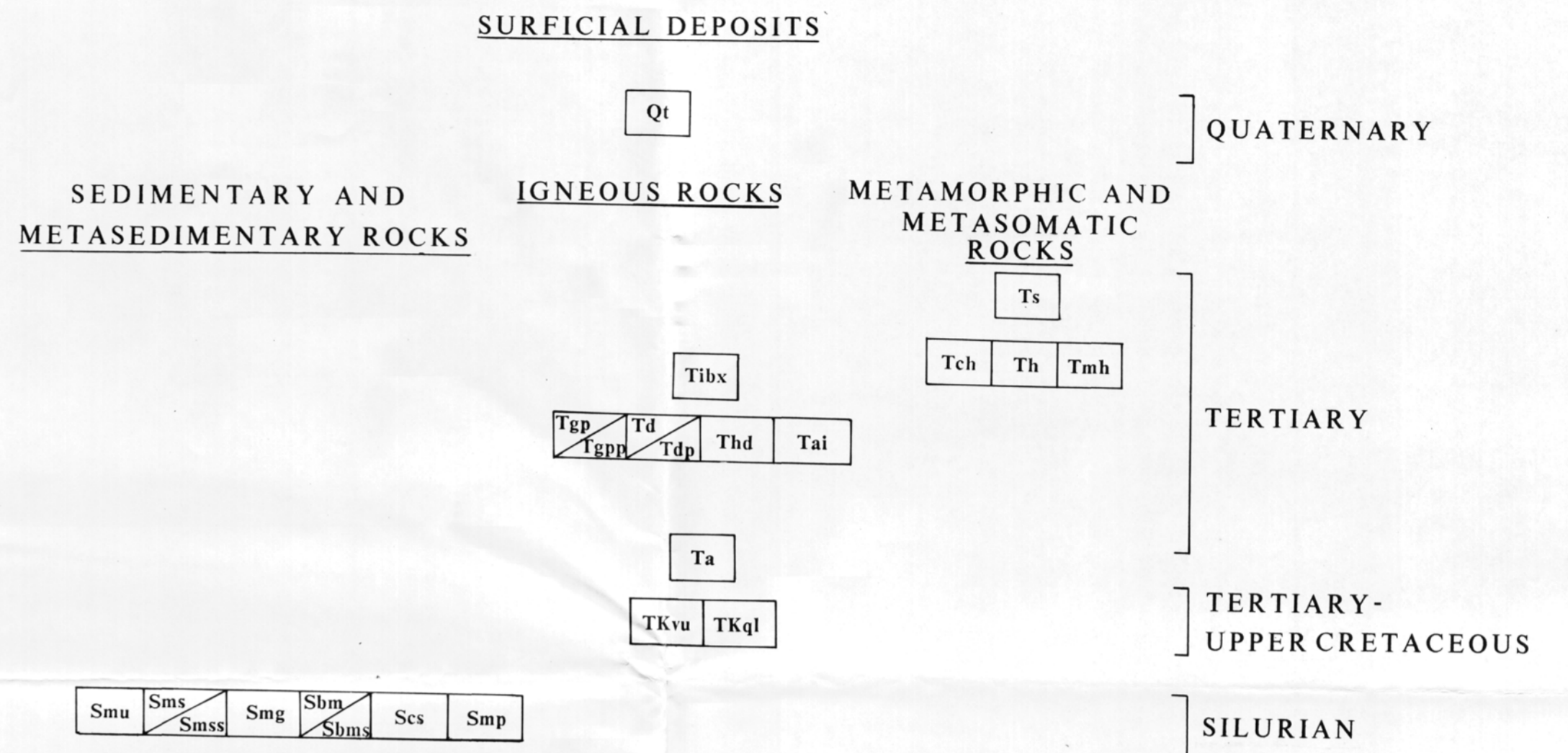


CORRELATION OF MAP UNITS

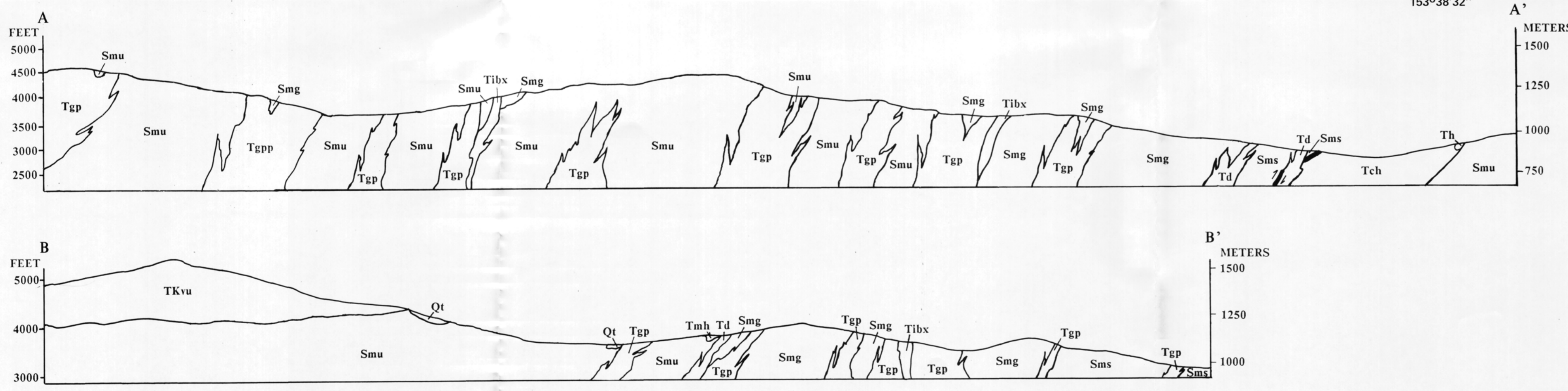


DESCRIPTION OF MAP UNITS

- SURFICIAL DEPOSITS**
 - Qt DIKE AND VOLCANIC TALUS---Talus slopes consist of debris from Veleska Lake volcanic complex and Tertiary dikes with minor marble talus.
- METAMORPHIC AND METASOMATIC ROCKS**
 - Ts SKARN---Fresh skarn is green and very fine grained; weathers brown black with orange-red hematite stain and occasional green copper stain. Skarn consists predominantly of chloritoid, elongated blades up to 5 cm at the marble front, semimassive to massive bodies; galena is generally localized in calcite veins. Some local alteration to amphibole or epidote skarn. Skarns occur along faults, along dikes in contact with marble, and as bedding replacements.
 - Td PORPHYRITIC HORNBLende-RICH DACITE DIKES---Fresh rock surfaces are usually light green due to propylitic alteration; weather orange brown. Phenocrysts, in order of abundance, are plagioclase, hornblende, biotite, and quartz. Two distinct types of hornblende phenocrysts occur: short, equilateral, black hornblende and larger, rectangular, green hornblende. Hornblende phenocrysts are up to 1 cm long with 4 to 6:1 elongation. Minor disseminated pyrite is present.
 - Ta AFANITIC IGNEOUS DIKES---Rock is light gray to light green. Rock texture is similar to margins of porphyritic dacite dikes (Td), but phenocrysts are absent.
 - Ta ANDESITE DIKES---Fresh rock varies from dark green to green; outcrops have conspicuous red iron staining. Matrix is aphanitic and contains phenocrysts of chloritized mafic minerals and plagioclase. Andesite contains up to 15 percent sulfides that are dominantly pyrrhotite with some pyrite and minor chalcopyrite.
 - TKvu VELESKA LAKE VOLCANIC COMPLEX---Primarily extrusive flows of intermediate to mafic compositions. Includes mudstone, tuff breccia, lapilli breccia, andesitic ash-fall tuff, and quartz latite flows.
 - TKql QUARTZ LATITE---Light to medium gray-green, aphanitic to porphyroaphanitic, chloritized; flow banding is rare.
- SEDIMENTARY AND METASEDIMENTARY ROCKS**
 - Smu MARBLE, UNDIFFERENTIATED---Primarily consists of marble talus. Includes rocks from all marble units and may include rocks from Tertiary igneous dikes.
 - Sms MARBLE WITH SILT PARTINGS---Medium- to thick-bedded, medium- to dark-gray, locally massive marble with fine silty laminations. Highly fractured and folded; folding is generally asymmetric and very tight. Mapped as Sms where unit contains chert, shaley interbeds.
 - Ssg MARBLE WITH GARNET LAYERS---Represents a higher metamorphic grade of Sms unit. Original silt bands in marble locally metamorphosed to green garnet bands.
 - Sbm BLACK MARBLE WITH CALCITE VEINLETS---Fresh marble is black, fine grained, and contains abundant white to yellow-white calcite veinlets; weathers to rough, dark-gray surface. Generally forms slopes. Mapped as Sbm where unit contains shaley interbeds.
 - Scs CALICAREOUS SANDSTONE---Fresh rock is gray to dark gray, fine to medium grained with calcite veinlets common; weathers to smooth, drab olive-green surface. Local graded bedding.
 - Smp LITHIC SANDSTONE, PHYLLITIC SLISTONE, SHALE, AND MARBLE---Brown to gray shale, siltstone, and medium- to coarse-grained lithic sandstone with light- to medium-gray, finely laminated marble. Siltstone and shale locally exhibit phyllitic textures. Unmetamorphosed equivalent to calc-silicate hornfels unit (Tch).
- IGNEOUS ROCKS**
 - Tibx IGNEOUS-MATRIX BRECCIA DIKES---Pale-green matrix contains phenocrysts of plagioclase (dominant), hornblende, and quartz and clasts of igneous, metasedimentary, and metasomatic rock. Clasts are usually darker green or darker brown than matrix. Clasts are well rounded to subangular and range up to 5 cm diam; some contain ore mineralization.
 - Tgp GRANODIORITE PORPHYRY DIKES---White to light-green, holocrystalline rock with phenocrysts of quartz, biotite, hornblende, and plagioclase. Plagioclase is dominant phenocryst phase; quartz eyes constitute approximately 10 percent of phenocrysts. Common epidote alteration of biotite, and chlorite and epidote alteration of hornblende. Mapped as Tgp where dikes contain disseminated pyrite.
 - Td/P PORPHYRITIC DACITE DIKES---Gray, aphanitic groundmass with phenocrysts of plagioclase, hornblende, biotite, and quartz. Grade into granodiorite porphyry dikes (Tgp). Mapped as Td/P where dikes contain disseminated pyrite.

MAP SYMBOLS

- Contact - Dashed where inferred; queried where doubtful.
- Fault - Dashed where inferred.
- Thrust fault - Dashed where inferred. Sawtooth on upper plate.
- Strike and dip of beds
 - Inclined
 - Vertical
 - Crenulated
 - Graded, showing direction of stratigraphic top
- Strike and dip of foliation
- Strike and dip of joints
- 1 Pyroxene skarn (fig. 4)
- 2 Epidote skarn (fig. 3)



GEOLOGY OF ZINC-LEAD SKARN DEPOSITS IN THE TIN CREEK AREA, MCGRATH B-2 QUADRANGLE, ALASKA
by
D.J. Szumigala
1987