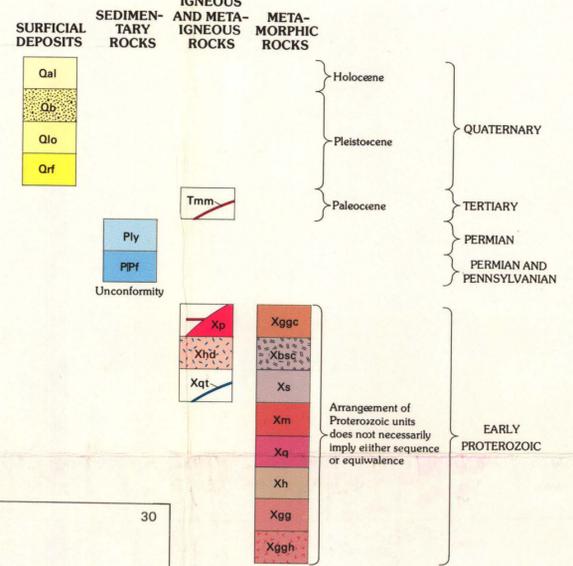


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- SURFICIAL DEPOSITS**
- Qal** ALLUVIUM, UNDIVIDED (HOLOCENE)
Post-Piney Creek alluvium—Coarse cobbly gravel and some boulders
Piney Creek Alluvium—Dark-gray to dark-brown micaceous sandy silt or silty sand
 - Qb** BROADWAY ALLUVIUM (UPPER PLEISTOCENE)—Silty cobbly gravel and coarse sand
 - Qlo** LOUVIERS ALLUVIUM (UPPER PLEISTOCENE)—Silty fine-grained sand becoming coarser at depth
 - Qrf** ROCKY FLATS ALLUVIUM (LOWER PLEISTOCENE)—Coarse bouldery cobbly gravel. Predominantly quartzite fragments
- SEDIMENTARY ROCKS**
- Ply** LYONS SANDSTONE (PERMIAN)—Light-gray to grayish-orange, crossbedded, fine- to medium-grained, quartzose sandstone; includes some conglomerate, siltstone, and mudstone
 - PPF** FOUNTAIN FORMATION (PERMIAN AND PENNSYLVANIAN)—Pink to reddish-orange arkosic sandstone and conglomerate, and dark-reddish-brown mudstone
- IGNEOUS AND METAIgneous ROCKS**
- Tmm** MAFIC MONZONITE (PALEOCENE)—Dark-gray dike, weathers light brown to gray
 - Xp** PEGMATITE (EARLY PROTEROZOIC)—Dikelike, lenticular, and irregularly shaped bodies composed principally of coarse-grained quartz, microcline, perthite, and mica
 - Xhd** HORNBLENDE DIORITE AND HORNBLENDE (EARLY PROTEROZOIC)—Mottled black and pale-gray, fine- to coarse-grained hornblende diorite and less abundant black to greenish-black, medium- to coarse-grained hornblende, usually poorly foliated
 - Xqt** QUARTZ VEINS (EARLY PROTEROZOIC)—White, fine- to coarse-grained massive quartz
- METAMORPHIC ROCKS OF SEDIMENTARY AND VOLCANIC(?) ORIGIN**
- Xggc** GRANITE GNEISS (EARLY PROTEROZOIC)—Pink to pinkish-gray, fine-grained quartz feldspar cataclastic gneiss of the Idaho Springs-Ralston shear zone
 - Xbsc** BIOTITE SCHIST (EARLY PROTEROZOIC)—Dark, fine- to medium-grained, cataclastic biotite schist with interlayers of felsic gneiss. Found in the Idaho Springs-Ralston shear zone
 - Xs** BIOTITE-MUSCOVITE SCHIST (EARLY PROTEROZOIC)—Very fine-grained to medium-grained; composed of quartz, biotite, muscovite, and feldspar; locally contains garnet, andalusite, staurolite, sillimanite, or tourmaline
 - Xm** MAGNETITE AND QUARTZ LAYER (EARLY PROTEROZOIC)—Alternating layers of magnetite and quartz in schist as much as 4.5–6 m in thickness; most layers unexposed, but magnetite float as much as 20 cm across found on surface
 - Xq** QUARTZITE (EARLY PROTEROZOIC)—Gray to white, fine- to medium-grained and foliated; may contain moderate amounts of muscovite, garnet, magnetite, calcite, and traces of other minerals
 - Xh** HORNBLLENDE GNEISS (EARLY PROTEROZOIC)—Fine- to medium-grained, composed of hornblende and plagioclase; generally unaltered, but may contain calcite, epidote, potash feldspar, and diopside
 - Xgg** GRANITE GNEISS (EARLY PROTEROZOIC)—Pink to pinkish-gray, very fine-grained to fine-grained; contains quartz, microcline, and plagioclase, and locally moderate amounts of biotite; occasionally found as conformable lenses of aplitic texture in hornblende gneiss unit (Xh)
 - Xggh** GRANITE GNEISS AND HORNBLLENDE GNEISS (EARLY PROTEROZOIC)—Complex interlayering of the two rock types in approximately equal proportions

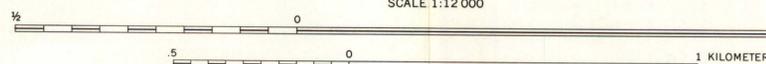
- GEOLOGIC CONTACT — Dashed where approximately located
- fb FAULTS AND OTHER FRACTURES — Mostly of the breccia-reef type, consisting of broken fragments of country rock cemented by ankerite, potassic feldspar, and quartz; fb denotes location of yellow-brown fault breccia rubble
- PITCHBLLENDE VEIN-FISSURE
- PLUNGING SYNCLINE IN SEDIMENTARY ROCK (synform in metamorphic rock)
- PLUNGING ANTIFORM
- PLUNGING OVERTURNED SYNFORM
- STRIKE AND DIP OF FOLIATION
- 60° Inclined
- Vertical
- 45° BEARING AND PLUNGE OF LINEATION — May be combined with symbols for planar structural features; lineations include subparallel alignment of elongate minerals or mineral aggregates, streaking, rodding, and the axes of crinkles and crenulations
- STRIKE AND DIP OF SEDIMENTARY BEDS
- x PROSPECT PIT
- ADIT
- SHAFT
- INCLINED SHAFT
- QUARRY
- o SPRING

12°
APPROXIMATE MEAN
DECLINATION, 1955

Base from U.S. Geological Survey

Geology mapped in 1973–1976
by E.J. Young

SCALE 1:12 000



CONTOUR INTERVAL 200 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

GEOLOGIC MAP OF THE SCHWARTZWALDER AREA,
JEFFERSON COUNTY, COLORADO