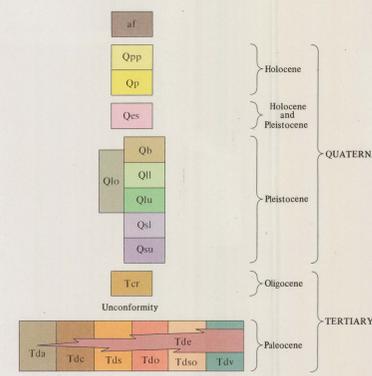


CORRELATION OF MAP UNITS



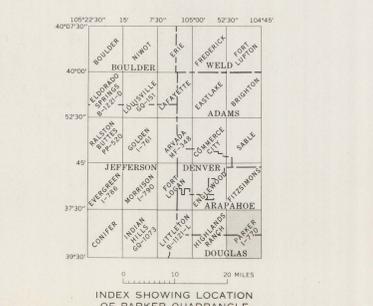
DESCRIPTION OF MAP UNITS

- af** ARTIFICIAL FILL - Clay, silt, sand, gravel, and various-sized pieces of heterogeneous bedrock, concrete, and brick. Includes engineered, compacted fills for highways, buildings, and bridge abutments, engineered and semi-engineered fills for dams and canal embankments, and loose-jumped materials in local trash dumps. Generally 10-20 feet thick, but some dams and embankments are as much as 40 feet thick.
- Opp** POST-PINEY CREEK ALLUVIUM (HOLOCENE) - Light-yellowish-gray (SY 7/2*) to grayish-orange-pink (SYR 7/2) sand, silt, and clay. Dark-brown (SYR 4/5) and dark-brown-black (SB 2/1) humic bog clay occurs in isolated deposits and is interlayered with sand and silt. Commonly fills stream channels to a depth of 5-10 feet, locally as much as 20-30 feet thick; thickest in the middle of channels it fills.
- Op** PINEY CREEK ALLUVIUM (HOLOCENE) - Moderate-yellowish-brown (10YR 5/4) to grayish-brown (SYR 3/2) poorly sorted silt, clay, sand, and interbedded gravel. Humic material common in upper 4-2 feet. Locally, lower part is silt gravel. Commonly 5-15 feet thick, but locally as much as 30 feet thick; thickest in the middle of the valley it fills.
- Qes** EOLIAN SAND (HOLOCENE AND PLEISTOCENE) - Light-brown (SYR 5/6) to grayish-orange-pink (SYR 7/2) very fine sand and silty sand composed of quartz and feldspar. Commonly crossbedded. Deposited by wind, from the Cherry Creek valley. Generally less than 10 feet thick, but locally as much as 40 feet thick.
- Qb** BROADWAY ALLUVIUM (PLEISTOCENE) - Dark-yellowish-brown (10YR 4/2) to light-brown (SYR 6/4) fine to coarse pebbly sand composed of quartz and feldspar grains, with interbedded lenses of clay. Terrace surfaces occur 10-30 feet above principal streams. As much as 30 feet thick.
- Qlo** LOESS (PLEISTOCENE) - Pale-brown (SYR 5/2) to grayish-red (SYR 4/2) fine eolian silt and clay, commonly mixed with fine sand. Upper 2-4 feet commonly very clayey. Mantles areas of bedrock, and of Louviers and Slocum Alluvium. Deposited by wind. As much as 15 feet thick; thickest on moderate slopes in the southern part of the area. Occurs only west of Cherry Creek.
- Qlu** LOUVIERS ALLUVIUM (PLEISTOCENE) - Moderate-redish-brown (10R 4/6) to moderate-yellowish-brown (10YR 5/4) pebbly feldspar-and-quartz sand and silty clay; bouldery gravels at the base of both the upper and lower parts (the gravel at the base of the upper part forms slopes steeper than those above and below the gravel, and is the basis for mapping an upper and a lower part of the Louviers). Deposits commonly grade upward from gravel into sand, then into silt and clay; they are poorly sorted. Covers and fills irregularities on bedrock surfaces. Terrace surfaces are 30-80 feet above principal streams. As much as 100 feet thick.
- Qli** Lower part - Mostly yellowish-colored; younger than the upper part (Qlu).
- Qlu** Upper part - Mostly reddish-colored; older than the lower part (Qli).
- Qsu** SLOCUM ALLUVIUM (PLEISTOCENE) - Grayish-red (10R 4/2) to dark-redish-brown (10R 3/4) quartz-and-feldspar sand and silty clay; bouldery gravels at the base of the upper and lower parts (that at the base of the upper part is the basis for mapping two parts). Deposits are graded roughly upward from gravel into sand, then into silt and silty clay. Individual textural units are well stratified. Abundant biotite mica and fossil wood are common throughout. A strongly developed calcium-carbonate-rich zone occurs near the top of each part of the Slocum. Upper surfaces occur from 50-200 feet above principal streams.
- Qsl** Lower part - Younger than the upper part (Qsu). As much as 65 feet thick.
- Qsu** Upper part - Older than the lower part (Qsl). As much as 65 feet thick.
- Tcr** CASTLE ROCK CONGLOMERATE (OLIGOCENE) - Mostly grayish-orange-pink (SYR 7/2) to yellowish-gray (SY 8/1) rock fragments ranging in size from 1/8 inch to 4 feet in diameter, in a matrix of fine-to-coarse-grained sandstone. Chaotically bedded; poorly to well cemented; locally deeply weathered. Forms flat to gently rolling highlands in the southern part of the map area. From 10 to 60 feet thick.

- Tds** DAWSON ARKOSE, UPPER PART (PALEOCENE) - Modifying adjectives indicate the most visually obvious aspect of the individual mapped lithologic unit. Individual units commonly pinch out laterally to give way to other units. Upper tongue of Denver Formation (Tde) intertongues with the upper part of the Dawson. Only the uppermost 500 feet crops out in the area, although the total thickness of the Dawson is about 1,500 feet in the quadrangle. Lower 800-1,000 feet is of Late Cretaceous age.
- Tda** Arkosic sandstone - Pinkish-gray (SYR 8/1) to very light yellowish gray (SY 3/4); locally large zones of moderate rd (SR 5/4) to dusky red (SR 3/4) color east of Cherry Creek. The term "arkosic" means that the sandstone contains much feldspar; the unit is made up of quartz and feldspar grains bound together with clay. Fine- to coarse-grained; contains abundant mica, crossbedded; hard when fresh or cemented with iron oxide or pyrite, but very soft where weathered. Clay binder is easily washed away by water under pressure. From 0 to 60 feet thick.
- Tdc** Conglomeratic sandstone - Grayish-red (10R 4/2) to dark-yellowish-brown (10YR 4/2) limonite-stained beds of pebbles and cobbles as much as 4 inches in diameter in a matrix of fine- to coarse-grained sandstone bound with clay. Crossbedded; very poorly sorted; poorly to well cemented. From 0 to 50 feet thick.
- Tds** Sandstone - Light-olive-gray (SY 5/2) to yellowish-orange-brown (10YR 5/5) crossbedded lens- and tabular-shaped beds of fine-grained quartz, feldspar, and mica in abundant clay binder. Silty, clayey; tough and hard when fresh but soft and powdery where deeply weathered. Iron-oxide-cemented concretions and lenses of conglomerate common throughout. From 5 to 85 feet thick.
- Tdo** Olive claystone - Moderate-olive-brown (SY 4/4) to dusky-yellow (SY 6/4) beds and lenses of clay that has been lithified to claystone. Blocky structure; tough, plastic when wet; silty; contains mica; thin interbeds of brown arkosic sandstone common throughout at varying intervals. From 5 to 60 feet thick.
- Tdso** Interbedded olive claystone and sandstone - Zones of interbedded olive claystone (Tdo) and sandstone (Tds) that are mainly covered by thin unconsolidated surficial material. Areas of outcrop of specific rock types are shown within this zone. Zone varies in thickness.
- Tdv** Variegated claystone - Shades of red, green, brown, and gray; slightly silty; contains mica; sandy; very plastic when wet; soft and blocky where weathered. Occurs in lens-shaped beds as thick as 35 feet.
- Tde** DENVER FORMATION, UPPER TONGUE (PALEOCENE) - Claystone, medium-gray (N 3) to grayish-brown (SYR 3/2); very plastic when wet, retains moisture for a long time; silty; blocky; commonly has extremely high swelling-pressure potential. Contains leaf and other plant fossils, which are very abundant in a few layers, scattered throughout the unit. From 20 to 50 feet thick.

- Contact**
- Bedrock outcrops** - Areas of bedrock exposure, easily accessible and generally desirable places to visit to see the attributes of the bedrock. The dominant lithology is shown by letter symbols (as Tdo, Tds). The small outcrops are isolated, commonly along a stream or wash; the large are large enough to show the outline of outcrop at map scale; the narrow are long, narrow outcrops commonly at the head of a draw.
- Small**
- Large**
- Narrow**
- Strike and dip of joints**
- Vertical**
- Inclined**
- Landslide or surface slip** - Arrow only is used to denote area too small to show outline.
- Spring or seep of groundwater at surface**
- Deflation basin** - A shallow depression caused by removal or surface material by wind.

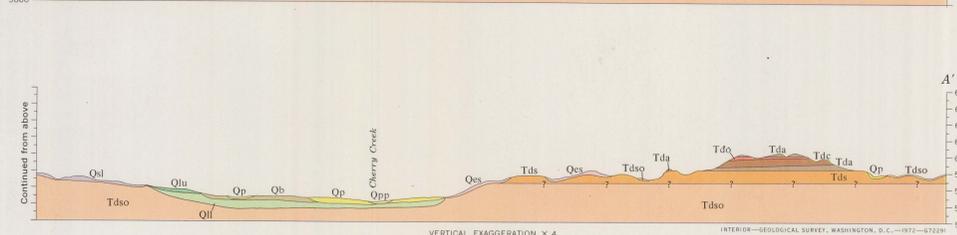
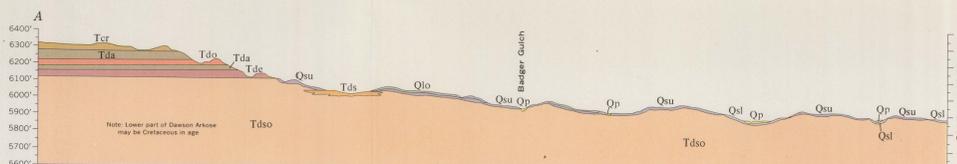
Where two unconsolidated units are mapped over bedrock (in this example loess, Qlo, and Slocum Alluvium, Qsu, over interbedded olive claystone and sandstone, Tdso), the bedrock lithology symbol is underlined and the lower unconsolidated unit symbol is in parentheses. Where one unconsolidated unit is mapped over bedrock, the bedrock lithology symbol is underlined and the surficial unit symbol is unemphasized.



Base from U.S. Geological Survey, 1965
Photorevised in 1972
10,000-foot grid based on Colorado coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks,
zone 13, shown in blue

SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Geology mapped in 1970-71



GEOLOGIC MAP OF THE PARKER QUADRANGLE, ARAPAHOE AND DOUGLAS COUNTIES, COLORADO

By
John O. Maberry and Robert M. Lindvall
1972