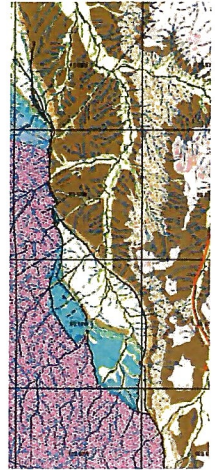


Geology of Sandstone Ranch Open Space

9605 S. Perry Park Road, Larkspur, CO 80118

Geologic Setting

The 2,038-acre Sandstone ranch is located along the western edge of the Denver Basin. The Denver basin is bordered on the west by Front Range uplift. The primary faults separating the basin from the Pre-Cambrian granitic mountains is the north-south Rampart Range fault and Perry Park splay fault. In Gove Creek, lower Paleozoic rocks were preserved, probably because they were not elevated and deeply eroded during the (Ancestral Rockies) Pennsylvanian uplift. The most prominent rocks on Sandstone Ranch are of the reddish colored Fountain Formation forming hogbacks and hoodoos on the edge of the Front Range and throughout the valley.



CGS OF-15-10



Fountain

Williams Canyon

Manitou

Sawatch

Pikes Peak

CGS OF-15-10

Fountain 280-320 MYA (Pennsylvanian/ Lower Permian)

Various shades red colored sandstone, siltstone, shale and conglomerates; 2000 ft thick - red color from iron oxides; Sandstone weathers irregularly, forming hoodoos and hogbacks; Shale and siltstone layers form recessed shelves; alluvial fan deposits from erosion of Ancestral Rockies (300MA); cross bedding; Fossils in the limestone and shale - brachiopods, crinoids, and gastropods.
(Paleosol -ancient soil on lower contact in quarry)



Williams Canyon ~ 355 MYA (Mississippian)

Thinly laminated mudstones, and gray, red, and purple dolomites. 44 feet thick; shallow marine environment with Conodont fossils.



Manitou Limestone 444-488 MYA (Lower Ordovician)

Reddish purple to grey limestone calcium carbonate (CaCo₃), dolomite calcium and magnesium carbonate (Ca(MgCO₃)), and shale; 130 ft thick ; Contain fossils including conodonts, cystoid stems, brachiopods, and trilobites, indicative of a warm, shallow water environment such as lagoon or reefs and sandy beaches.

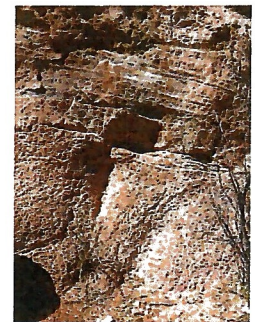
Sawatch Sandstone 530 MYA (Cambrian)

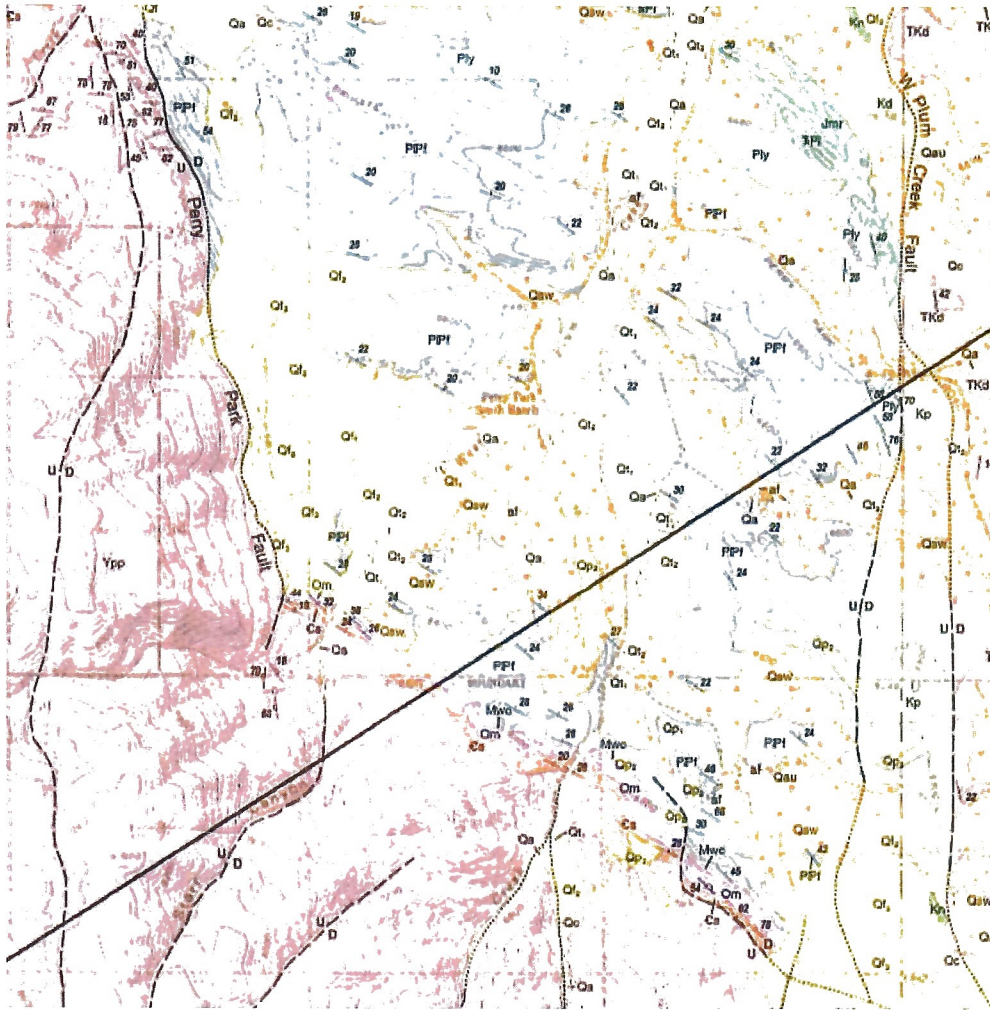
White, light gray and red sandstone with greenish glauconite near the top; 80 feet thick; forms low hogback ridges - an ancient shoreline (oxygen rich environment) becoming more marine - transgressing sea (sea level rise); fossils found- mollusks, brachiopods and trilobites.

(Great Unconformity - Erosional gap of +/- 570 million years between Sawatch and Pikes Peak granite)

Pikes Peak Granite 1.1 BYA (Pre-Cambrian)

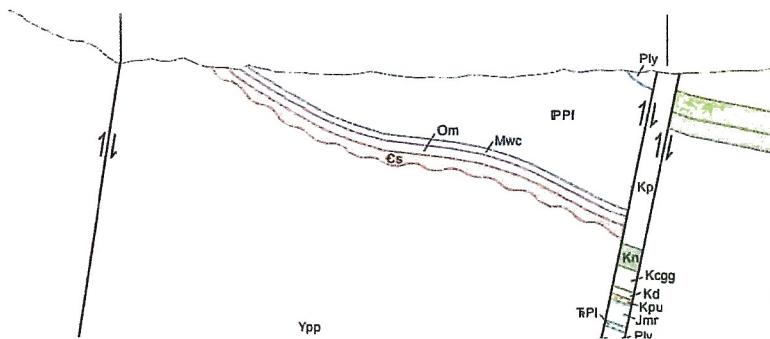
Resistant, red, pink, and greenish-gray, coarse-grained granite intrusion composed chiefly of quartz, feldspar, and hornblende with minor amounts of biotite. liquid magma pushed up from the earth's mantle and cooled about 2-3 miles below the surface.






- Cenozoic**
Qa Channel and flood-plain alluvium
Qt Terrace alluvium one
Qsw Sheetwash
Qf Alluvial fan deposit
Qp Older alluvium
Qc Colluvium
TKd Dawson formation
Mesozoic
Kp Pierre Shale
Kn Niobrara formation
Kd Dakota sandstone
TrPl Lykins formation
Paleozoic
Ply Lyons sandstone
PPI Fountain Formation and Glen Eyrie
Mwc Williams Canyon
Om Manitou Formation
Cs Sawatch Sandstone
Pre-Cambrian
Ypp Pikes Peak Granite

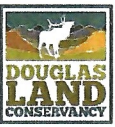
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COLORADO

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to promote and protect
Douglas County's open spaces



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