Stairway

Geologic Map of the Bonneville Peak Quadrangle, Bannock and Caribou Counties, Idaho

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Geologic History

The geology of the Bonneville Peak Quadrangle is dominated by Paleozoic units, with some Mesozoic and Cenozoic rocks in the vicinity of the Snake River Plain. The Paleozoic sequence begins with the Ordovician St. Charles Formation, which consists of medium- to thick-bedded, bioclastic dolostone with sparry calcite- and quartzarenite. Graded beds on a scale of <1 cm are common, and burrows are present locally. Conglomerate is strongly lithified and clast-supported, quartz arenite. The formation is inferred to be present below a loess cap in the southeastern part of the map. The formation is described in nearby areas by Trimble and Carr (1976). Neither the upper nor the lower contact is exposed in the map area. In 1976, the formation is placed below the first appearance of the Inkom tuff member of the upper member, Tertiary Starlight Formation, with an elevation of approximately 700 m (2,240 feet). Thickness is approximately 700 m (2,240 feet).

The St. Charles Formation is overlain by the Pocatello Formation (Upper Proterozoic), which is characterized by a regional period of lowered sea level. Sequence boundary 1 can be seen north of Green Canyon, with an elevation of approximately 700 m (2,240 feet). Sequence boundary 2 is best exposed at the base of steep slopes, with little or no matrix material present. Forms to very coarse-grained quartz arenite with abundant Liesegang banding. In the surrounding areas, as much as 750 m thick (1,200 feet and 2,400 feet; 540 feet and 740 feet thick). Cross section only.

The Pocatello Formation is overlain by the Camelback Mountain Quartzite (Cambrian and Upper Proterozoic), which is characterized by green siltstone incised by channels to medium- to thick-bedded, bioclastic dolostone with sparry calcite and quartz arenite. Graded beds on a scale of <1 cm are common, and burrows are present locally. Conglomerate is strongly lithified and clast-supported, quartz arenite. The formation is inferred to be present below a loess cap in the southeastern part of the map. The formation is described in nearby areas by Trimble and Carr (1976). Neither the upper nor the lower contact is exposed in the map area. In 1976, the formation is placed below the first appearance of the Inkom tuff member of the upper member, Tertiary Starlight Formation, with an elevation of approximately 700 m (2,240 feet). Thickness is approximately 700 m (2,240 feet).

The Camelback Mountain Quartzite is overlain by the Pocatello Formation (Upper Proterozoic), which is characterized by green siltstone incised by channels to medium- to thick-bedded, bioclastic dolostone with sparry calcite and quartz arenite. Graded beds on a scale of <1 cm are common, and burrows are present locally. Conglomerate is strongly lithified and clast-supported, quartz arenite. The formation is inferred to be present below a loess cap in the southeastern part of the map. The formation is described in nearby areas by Trimble and Carr (1976). Neither the upper nor the lower contact is exposed in the map area. In 1976, the formation is placed below the first appearance of the Inkom tuff member of the upper member, Tertiary Starlight Formation, with an elevation of approximately 700 m (2,240 feet). Thickness is approximately 700 m (2,240 feet).