

PHYSIOGRAPHY AND GEOLOGY OF PERIMAN LOCALITY

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The Periman Locality is situated in the Dolores River Canyon in the central portion of the Dolores Project field area just east of the McPhee townsite and Sagehen Flats. The locality includes the Dolores River and its flood plain, alluvial fans, steep canyon walls, and the House Creek Fault.

The Dolores River has cut a deep canyon in the northern part of the locality. The Dakota Sandstone, Burro Canyon Formation, and Morrison Formation are all exposed in the section. The Entrada Sandstone becomes exposed at the northern edge of the locality and is almost fully exposed downstream by Grassy Mesa and the McPhee dam site. The valley becomes quite gentle to the south because of a general south-southwesterly dip to the stratigraphic units. The valley opens up at Sagehen Flats and House Creek. This gentle part of the valley is cut off abruptly by the House Creek Fault which runs generally NE-SW across the project area. It is a high angle dip slip normal fault with the south side of the fault uplifted. The river has cut through this to form a deep canyon again in the southern third of the locality. The Dakota Sandstone, Morrison Formation and Burro Canyon Formation are again exposed in the canyon walls.

The Dakota Sandstone provides good building material along with some thin sandstone units in the Morrison and Burro Canyon Formations. The Morrison and Burro Canyon Formations are also the two major sources of flaked lithic material in the project area, providing a range of material from siliceous siltstones to cherts to ortho quartzites (silica cemented quartz sand). Both flaked lithic material and building material can be found either in outcrop or as colluvial debris on the canyon walls.

The largest clay source in the project area is the Mancos Shale which does not outcrop in the Periman Locality. If clay was to be obtained from the Mancos Shale it would have to be obtained either in the Sagehen Locality or in isolated areas along House Creek Locality or on the Dakota dip slope.

The flood plain of the Dolores River consists of three major land forms: active flood plain, inactive flood plain, and alluvial fans.

Active flood plain is the area that gets flooded during normal spring runoff. A weakly developed soil (fluvent-entisol) is formed in the shallow sandy alluvium overlying gravels. This is poorly suited for agriculture due to its shallowness and the activity of the river. The remaining portion of the active flood plain is exposed gravel beds.

The inactive flood plain is that part that floods only in extreme high water conditions. This part of the flood plain has well-sorted fluvial sands, 1 meter or more thick, overlying river cobbles. Cheyenne sandy loam (a mollisol) has developed in these sediments. It is a well-drained thick soil with an A-B-C horizon sequence. It stays fairly moist all year due to its close proximity to the water table. This soil has good agricultural potential and may very well have been used by communities along the flood plain (see soils map).

Deposited on top of the flood plains are a number of alluvial fans. The fans are a result of short haul transport of colluvial material down drainages by water and subsequent deposition on the flood plain in a fan-like shape. These fans may include gravel deposits from the river as well as have been reworked by flooding. The largest fan in the locality is the Periman site. This fan shows stratified colluvial material as well as some rounded gravel deposits from the river. There may also be some

interfingering with flood plain deposits at the foot of the fan. This fan has a historic site on it, the Periman House, and a prehistoric site, the Periman Pueblo (5MT4671).

The Dolores River has a perennial flow and water can be easily obtained from it.

The Periman Locality is quite suitable for prehistoric habitation, having lithic resources, clay, water and suitable agricultural land readily available.