

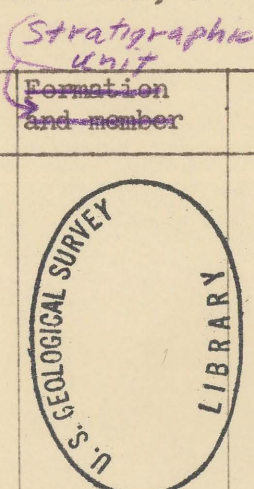
Table 1.—Generalized stratigraphic section of rocks in the Lisbon Valley area,
San Juan County, Utah

(Modified from Weir, G. W., and Puffett, W. P. (written communication)).

Age	Formation and member	Thickness in feet	Description	Remarks
Quaternary		0-400	Soil, alluvium, loess, terrace gravel, landslide deposits	Soil, alluvium and loess cover benches. Terrace gravels cap small areas along some streams. Landslide deposits overlie much of the Brushy Basin member and parts of the Salt Wash member. They are sparsely distributed elsewhere, most commonly along canyon walls.
Unconformity				
	Mancos shale	2350	Dark gray to yellow brown calcareous mudstone with minor limestone, claystone and sandstone. Sandstone member near top of exposed section is about 350 feet thick.	No complete section known in the Lisbon Valley area.
Late Cretaceous	Dakota sandstone	100	Brown fine-grained to conglomeratic sandstone, carbonaceous claystone, coal; plant fossils common; basal conglomerate includes some fragments of Burro Canyon material.	Caps many of the high mesas and underlies much of the area northeast of the Lisbon Valley fault. Forms bench or upper part of cliff above Burro Canyon formation.
Unconformity				
Early Cretaceous	Burro Canyon formation	200	Fine-grained to conglomeratic, light brown to light gray sandstone, greenish-gray mudstone, and sparse limestone and chert. Silicified sandstone common at top.	Forms cliff above steep slope of the Brushy Basin member of the Morrison formation.
Late Jurassic	Brushy Basin member	350-375	Varicolored mudstone and some fine-grained sandstone. Lenses of conglomerate and conglomeratic sandstone near top and bottom. Massive chert is present locally.	Much of mudstone is believed to be of volcanic origin. Member forms steep slope covered with landslide deposits.
	Salt Wash member	350-375	Lenticular quartzose sandstone; interbedded with reddish brown mudstone. Within the sandstones crossbedding is common and abundant carbonaceous material occurs locally.	Commonly crops out as an alternating series of steep slopes and benches. The uppermost prominent sandstone bed contains most of the uranium-vanadium deposits of the Salt Wash member.
	Summerville formation	50	Reddish brown horizontally bedded sandstone and mudstone. Thin beds and nodules of gray limestone occur in the upper part of the formation. Modular beds of chert commonly are present near the middle of the formation.	Forms gentle to steep slope. Chert is most common in the northern part of the Lisbon Valley area where it may reach a thickness of 8 feet or more.
	Entrada sandstone	350	Fine-grained, moderately to well-sorted, light brown to light reddish-brown sandstone. Cross-bedded strata intercalated with horizontally bedded strata.	Forms cliffs below Summerville bench.
Late and Middle Jurassic	Carmel formation	60	Irregularly bedded, fine-grained, silty, red-brown sandstone and mudstone.	Commonly forms base of Entrada cliff and bench above the Navajo sandstone. Weathers to rounded forms.
Unconformity				
Jurassic and Jurassic?	Navajo sandstone	350	Fine-grained, well-sorted, probably wind-deposited, sandstone. Light brown to light red-brown, massive, and crossbedded.	Forms cliffs, broad benches, and badlands.
Jurassic?	Kayenta formation	250	Purplish gray to reddish brown siltstone and fine-grained sandstone. Poorly sorted, with interbedded shales and mudstones.	Upper part of formation commonly crops out as the basal part of Navajo cliff; lower part forms bench above the Wingate cliff.
	Wingate formation	300	Very fine to fine-grained generally well-sorted, probably wind-deposited, sandstone. Cross-stratified, very pale orange to light brown in color.	Forms a sheer cliff.
Late Triassic	Chinle formation	400	The Chinle formation can be divided into two units. The upper unit ranges from 323 to 385 feet in thickness, is reddish brown to light olive gray, and consists of 50-50 percent mudstone, 40-45 percent sandstone and silty sandstone, and about 5 percent mudstone-pebble conglomerate. The lower unit ranges from 30 to 91 feet in thickness and is greenish gray to yellowish gray with purplish red to red-brown mottling. It consists of 15 to 20 percent mudstone, 60-70 percent sandstone, and 15-20 percent mudstone-pebble and limestone-pebble conglomerate. (The above data are based upon three sections measured by G.W. Weir.) Carbonaceous material is common in the lower unit in pieces ranging in size from small flakes to logs a foot or more in diameter and several feet long. Many beds are lenticular, and crossbedding is common.	Crops out as a steep slope interrupted by ledges of resistant sandstone or siltstone. Chinle rocks overly truncated Cutler beds with an angular discordance of about 3° along Big Indian Wash. The lower unit according to Stewart (1957, p. 447), may be equivalent to the Mossback member of the Chinle of southeastern Utah and the upper unit equivalent to the Church Rock member. Major uranium-vanadium deposits are found in the lower unit of the Chinle formation.
Unconformity				
Middle (?) and Early Triassic	Moenkopi formation	0-300	Pale reddish brown micaceous siltstone interbedded with very fine-grained cross-stratified sandstone. Ripple marks are common.	Not exposed in the Big Indian Wash area. It is exposed in canyons lying a short distance west of the area shown in figure 2.
Unconformity				
Permian	Cutler formation	1500	Red-brown to grayish purple siltstones and mudstones interbedded with lighter colored lenses of arkosic sandstones.	Forms steep slope and underlies valley bottom in the area near Big Indian Wash.
Pennsylvanian	Hermosa formation	2000	Gray fossiliferous limestones interbedded with gray-green to red-brown siltstones and sandstones.	Crops out east of Big Indian Wash where resistant beds form a series of hogbacks. Lower part of formation is not exposed in Lisbon Valley area.

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(200)
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Morrison formation

San Rafael group

Wingate formation Sandstone

Member Member