

Table 1.--Description of geologic units known to underlie parts of the lower Dirty Devil River basin area--Continued

Geologic unit				Character of material	Hydrologic characteristics	
Erathem	System	Series	Formation			
MESOZOIC	Triassic	Lower Triassic	Moenkopi Formation	Lower part of Moenkopi Formation	Light-reddish-brown, yellow, and green even-bedded siltstone and sandstone containing gypsum veinlets; a chert pebble conglomerate at base 20 to 140 feet thick.  Total thickness of the Moenkopi Formation is 360 to 1,000 feet or more, increasing from east to west.	Similar to Upper part of Moenkopi Formation.
PALEOZOIC (300PLZC)	Permian (310PRMN)	Lower Permian	Cutler Formation (310CTLR)	Kaibab Limestone (310KIBB)	Light-gray to brown cherty silty limestone, white calcareous siltstone, white thin beds of cross-bedded fine-grained sandstone, and some dolomite. Missing in eastern part of area; 0 to 100 feet in San Rafael Swell, thickening to 350 feet in Capitol Reef area.	Very low to moderate(?) permeability. Undisturbed formation probably has very low permeability; where fractured by folding or faulting, secondary permeability may be at least moderate. Petroleum-test well (D-31-7)36dad-1W yielded freshwater of the calcium sulfate type from a depth of 3,414 feet. Other petroleum-test wells to the east yielded slightly to moderately saline water of mixed types.
				White Rim Sandstone Member (310WTRM) (of Cutler Formation)	The Coconino Sandstone, in western part of area, interfingers with members of the Cutler Formation in eastern part of area. (See fig. 4.) Coconino consists of light-gray to buff friable to hard fine-grained thickly crossbedded eolian sandstone; grit and considerable limestone in lower 40 feet. 700 to 1,200 feet thick, increasing southward.	Very low to moderate(?) permeability. No direct data available, but formation estimated to have characteristics similar to Navajo Sandstone, including effects of fracturing. Records of petroleum-test wells (table 8) indicate water in formation in most areas tested. Where deeply buried, water probably is slightly to moderately saline, but in and near outcrops, as in central part of Capitol Reef National Park, water may be fresh.
				Organ Rock Tongue or Member (310ORGK)	Reddish-brown siltstone and thin-bedded fine-grained sandstone. 0 to 900 feet thick.	Very low(?) permeability. Water sample from well (D-29-10)8ccb-1 was moderately saline and of the calcium sulfate type.
				Cedar Mesa Sandstone Member (310CDRM)	Yellowish-gray, reddish-orange, and reddish-brown friable fine- to coarse-grained thickly crossbedded eolian sandstone, with minor beds of red sandy shale and gray cherty limestone. 750 feet thick.	See above discussion of Coconino Sandstone. No water samples, but water probably is saline.
				Halgaito Tongue or Member (310HLGT)	Thin-bedded mudstone and siltstone. This unit may not be present in area but was identified as such in well (D-29-10)8ccb-1 (table 8), where the unit is 295 feet thick.	Very low(?) permeability. Characteristics unknown. The only available water sample was moderately saline and of the sodium sulfate type.
				Rico Formation (310RTCO)      Elephant Canyon Formation (of Baars, 1962) (319ELPC)	Rico Formation: Reddish-brown and greenish-gray fine- to coarse-grained crossbedded sandstone; gray and grayish-green thin- to thick-bedded cherty limestone; red and purple shale and siltstone. 600 feet thick at east edge of area, thinning westward to 0 feet. Absent in San Rafael Swell. In some petroleum tests, this section is identified as the Elephant Canyon Formation, or simply as "Wolfcamp" or "Wolfcamp carbonates."	Very low(?) permeability. No water samples, but water probably is saline.
PALEOZOIC (300PLZV)	Pennsylvanian (320PSLV)	Middle and Upper Pennsylvanian	Hermosa Group (Wengert and Matheny, 1958)	Upper member (includes Honaker Trail Formation (321HKT) of Wengert and Matheny, 1958)	Gray thin- to thick-bedded dense to coarsely crystalline cherty limestone, interbedded with gray and brown massive to thin-bedded sandstone, siltstone, and sparse beds of gray and red shale. 200 to 1,300 feet, increasing eastward.  Note: A small exposure of the top of this unit is mapped in Straight Wash near the central east edge of the San Rafael Swell	Very low(?) permeability. Water sample from petroleum-test well (D-25-15)22aca-1 was very saline and of the sodium chloride sulfate type.
				Paradox Member of the Hermosa Formation (324PRDX)	Salt, gypsum, anhydrite, black shale, and gray sandstone and limestone. Thickness increases eastward from 0 to 2,500 feet as determined from well logs. Absent in San Rafael Swell. (See also Hanshaw and Hill, 1969.)	Very low to moderate(?) permeability; permeability very low except where fracturing has allowed water circulation to dissolved salt, gypsum, and limestone. Water samples analyzed were moderately saline of the sodium sulfate type and very saline to briny water of the sodium chloride type.
				Lower member (Pinkerton Trail Formation (327PKRT) of Wengert and Strickland, 1954)	Mainly dark-gray limestone, dolomite, and shale. 0 to 200(?) feet thick.	Very low(?) permeability. Water sample from well (D-30-13)4dcb-1 was brine of sodium chloride type.
				Molas Formation (320MOLS)	Variegated claystone and shale; siltstone and conglomerate. Includes limestone and chert regolith on karst surface in upper 10 to 100 feet of underlying Mississippian rocks, wherever Mississippian is or was present. 20 to about 580(?) feet thick.	Very low permeability; probably confines water in Mississippian rocks. No water-quality data.