

**Geologic and hydrogeologic units relevant to the hydrogeologic framework for the Raft River Basin, Idaho-Utah**

Digital supplemental table to the Hydrogeologic Framework and Groundwater Budget for the Raft River Basin, Idaho - Utah, Idaho Geological Survey Bulletin 32 (<https://www.idahogeology.org/product/B-32>; Clark, 2024, section, "Geology")

Eon	Era	Period	Series/ Epoch		Age (Ma)	Geologic units							Hydrogeologic unit (see Clark, 2024)		Major geologic event (variously referenced)		
						Idaho (modified from Lewis and others, 2012)			Utah (modified from Hintze and others, 2000)		Utah (modified from Miller and others, 2020)						
Phanerozoic	Cenozoic	Quaternary	Holocene		0 - 0.012	Alluvial deposits and alluvial fan deposits	Basalt	Loess, Lake Bonneville, and glacial deposits	Surficial alluvium and colluvium (younger and older)	Younger alluvium	Older alluvium	Landslide deposits	Colluvium and talus	Glacial till	Pliocene - Holocene unconsolidated deposits (boulders, cobbles, gravel, sand, silt, and clay)	Pleistocene basalt	Pleistocene alluvial deposition and alluvial fan development (Pierce and Scott, 1982)  Pleistocene basalt flows associated with the Snake River Group (Pierce and others, 1983)
			Upper/Late	0.012 - 0.126													
			Middle	0.126 - 0.781													
			Lower/Early	0.781 - 2.588													
		Tertiary	Pliocene		2.58 - 5.333	Sedimentary rocks (Basin and Range)	Rhyolite and Older rhyolite, latite, and andesite	Volcanic rocks (mostly basalt)	Salt Lake Fm and other valley-filling alluvial, lacustrine, and volcanic units	Volcanic rocks (rhyolite)	Salt Lake Fm., undivided Salt Lake Fm., conglomerate lithosome Minette of Onemile Creek Dacite of Holt Creek Rhyolitic welded tuff of Lynn Creek Rhyolites of Twin Peaks		Miocene unconsolidated deposits (gravel, sand, silt, and clay) and sedimentary rocks (siltstone, sandstone, and conglomerate)	Miocene volcanic rocks (ash, tuff, and rhyolite)	Basin and Range faulting; exhumation of the Albion-Raft River-Grouse Creek metamorphic core complex (Konstantinou and others, 2012)  Volcaniclastic sediment deposition in valleys, sourced from surrounding mountain ranges (Devine and Bonnicksen, 1980)		
			Oligocene		23.03 - 33.9						Granite					Granite of Road Canyon Granite of Vipont	
	Mesozoic	Triassic			201.3 - 251.9	Sedimentary rocks							Chinle and Ankareh Fms	Not represented	Sevier orogeny metamorphism (late Cretaceous/early Tertiary) (Armstrong, 1968; Covington, 1983)		
	Paleozoic	Permian			251.9 - 298.9	Sedimentary rocks							Oquirrh Group, undivided	Trapper Creek, Badger Gulch, Third Fork Formations, undivided	Carboniferous - Permian limestone, dolomite, and shale	Shallow to moderate depth water deposition of limestone, dolostone, and sandstone throughout the Raft River Basin (Yancey and others, 1980)	
			Pennsylvanian		298.9 - 323.2												
		Mississippian		323.2 - 358.9													
		Ordovician		443.8 - 485.4													
		Cambrian			485.4 - 541.0	Sedimentary rocks							Fish Haven, Swan Peak, Garden Ciy, Eureka, and other Fms	Ely Springs Dolomite and Eureka Quartzite, undivided Eureka Quartzite, metamorphosed Pogonip Group, metamorphosed			
Proterozoic	Neo-proterozoic			541.0 - 1,000	Windermere Supergroup							Intrusive and metamorphic rocks and Sedimentary and metasedimentary Fms	Schist of Mahogany Peaks and Quartzite of Clarks Basin Schist of Mahogany Peaks Schist of Stevens Spring Schist of Upper Narrows Schist of Upper Narrows Elba Quartzite Elba Quartzite, schist member Quartzite of Clarks Basin Quartzite of Yost	Archean - Ordovician intrusive, metasedimentary, and metamorphic rocks	Wyoming province associated metamorphism during the Archean (Sims and others, 2005)  Sedimentary and volcanic rock deposition during two rifting episodes of the Laurentia western margin (Yonkee and others, 2014)		
	Paleo-proterozoic			1,600 - 2,500	Metamorphic rocks												
Archean					2,500 - 4,000	Metamorphic rocks								Green Creek Complex, granite and granite gneiss Green Creek Complex, metamorphic mafic igneous rocks Green Creek Complex, metamorphosed trondhjemite and pegmatite Green Creek Complex, older schist			

**Notes:**

Table compiled by A. Clark (Idaho Geological Survey) as a digital supplemental table.

Not shown in table: Ordovician-Neoproterozoic rocks, undivided; Oquirrh Group, limestone unit (Utah, minor exposures).

Dashed lines represent unconformity.

The Raft River Formation is not identified on surficial geological maps used in the hydrogeologic unit assignment (Clark, 2024).

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