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ERA	System and Series		Lithostratigraphic units of Love et al. (1993) in Bighorn Basin and Owl Creek and Bighorn Mountains	Hydrogeologic division of Lowry et al. (1976)	Hydrogeologic unit of Libra et al. (1981)	Hydrogeologic unit of Western Water Consultants, Inc. (1982a,b) and Doremus (1986)	Hydrogeologic unit of Western Water Consultants, Inc. (1983b)	Hydrogeologic unit of Cooley (1984, 1986)	Hydrogeologic unit of Jarvis (1986a) and Spencer (1986a)	Hydrogeologic unit of Wyoming Statewide Framework Plan (WWC Engineering et al., 2007, fig. 4-9)	Hydrogeologic unit used in this report
CENOZOIC	Quaternary	Holocene and Pleistocene	Quaternary alluvium, terrace deposits, and glacial deposits	1	Major aquifer	Principal aquifers	Secondary aquifer	Not discussed	Not discussed	Major aquifer	Alluvial aquifers, terrace-deposit aquifers, and glacial-deposit aquifers; Quaternary unconsolidated-deposit aquifers
CENOZOIC	Tertiary	Pliocene[1]			Upper Cretaceous/Tertiary aquifer system	Units not present and (or) discussed in study					
CENOZOIC	Tertiary	Miocene	Lower Miocene and Oligocene rocks[2]								
CENOZOIC	Tertiary	Oligocene	White River Formation	2						Marginal aquifer	White River aquifer
CENOZOIC	Tertiary	Eocene	Wapiti Formation[2]; Aycross Formation[2]; Wagon Bed Formation							Wagon Bed Formation–marginal aquifer	Wagon Bed confining unit
CENOZOIC	Tertiary	Eocene	Tatman Formation[2]								
CENOZOIC	Tertiary	Eocene	Willwood Formation		Aquifer/discontinuous aquifers and confining units		Secondary aquifer			Minor aquifer	Willwood aquifer[7]
CENOZOIC	Tertiary	Paleocene	Fort Union Formation		Aquifer/discontinuous aquifers and confining units		Secondary aquifer			Major aquifer–sandstone	Fort Union aquifer
MESOZOIC	Cretaceous	Upper Cretaceous	Lance Formation	3	Aquifer/discontinuous aquifers and confining units	Principal aquifer (Lance–Meeteetse–Mesaverde aquifer)	Secondary aquifer			Major aquifer	Lance aquifer
MESOZOIC	Cretaceous	Upper Cretaceous	Meeteetse Formation; Lewis Shale		Aquifer/discontinuous aquifers and confining units		Secondary aquifer			Major aquitard	Meeteetse aquifer and confining unit
MESOZOIC	Cretaceous	Upper Cretaceous	Mesaverde Formation; Teapot Sandstone Member; Eagle Sandstone		Aquifer/discontinuous aquifers and confining units		Secondary aquifer			Major aquifer–sandstone	Mesaverde aquifer; Lower Tertiary/Upper Cretaceous aquifer system
MESOZOIC	Cretaceous	Upper Cretaceous	Cody Shale	4	Regional aquitard	Major regional confining unit	Leaky confining unit			Major aquitard	Cody confining unit
MESOZOIC	Cretaceous	Upper Cretaceous	Frontier Formation		Minor aquifer	Principal aquifer (Frontier aquifer)	Alternating leaky confining units and secondary aquifers			Minor aquifer	Frontier aquifer[7]
MESOZOIC	Cretaceous	Upper Cretaceous	Mowry Shale		Aquitard	Leaky confining unit; Regional confining unit	Leaky confining unit			Major aquitard	Mowry confining unit; Mowry-Thermopolis c.u.
MESOZOIC	Cretaceous	Lower Cretaceous	Muddy Sandstone		Aquitard	Minor aquifer	Secondary aquifer			? Muddy Sandstone ?[4]	Muddy Ss aquifer
MESOZOIC	Cretaceous	Lower Cretaceous	Thermopolis Shale			Leaky confining unit	Leaky confining unit			Major aquitard	Thermopolis confining unit
MESOZOIC	Cretaceous	Lower Cretaceous	"Dakota Sandstone"; Cloverly Formation; "Lakota Sandstone"		Minor aquifer	Principal aquifer (Cloverly aquifer)	Secondary aquifer			Major aquifer–sandstone	Cloverly aquifer[7]; Lower and middle Mesozoic aquifers and confining units
MESOZOIC	Jurassic	Upper Jurassic	Morrison Formation	5	Minor aquifer and (or) local confining unit	Major regional confining unit	Alternating leaky confining units and secondary aquifers			Minor aquifer	Morrison confining unit and aquifer[7]
MESOZOIC	Jurassic	Upper Jurassic; Middle Jurassic	Sundance Formation		Minor aquifer and (or) local confining unit		Alternating leaky confining units and secondary aquifers			Marginal aquifer	Sundance confining unit and aquifer
MESOZOIC	Jurassic	Middle Jurassic	Gypsum Spring Formation		Minor aquifer and (or) local confining unit	Major regional confining unit	Alternating leaky confining units and secondary aquifers			Marginal aquifer	Gypsum Spring confining unit and aquifer
MESOZOIC	Jurassic(?) and Triassic(?)		Nugget Sandstone		? Nugget[2] ?		Leaky confining unit			Major aquifer–sandstone	Nugget aquifer
MESOZOIC	Triassic	Upper Triassic	Chugwater Group or Formation: Popo Agie Formation or Member; Crow Mountain Sandstone or Sandstone Member; Alcova Limestone or Limestone Member		Minor aquifer and (or) local confining unit			Confining unit	Leaky confining unit	Marginal aquifer	Chugwater–Dinwoody aquifer and confining unit; Chugwater aquifer[7]
MESOZOIC	Triassic	Lower Triassic	Chugwater Group or Formation: Red Peak Formation or Member								
MESOZOIC	Triassic	Lower Triassic	Dinwoody Formation; Goose Egg Formation		Minor aquifer and (or) local confining unit	Dinwoody Formation–leaky confining unit	Dinwoody Formation–leaky confining unit	Minor aquifer and discontinuous confining unit	Dinwoody Formation–leaky confining unit	Dinwoody Formation–marginal aquifer	Dinwoody confining unit; Goose Egg aquifer and confining unit; Goose Egg–Phosphoria aquifer and confining unit
PALEOZOIC	Permian		Phosphoria Formation and related rocks (Park City Fm); Possible uppermost Minnelusa Formation[2]			Principal aquifer (Phosphoria–Tensleep aquifer)	Secondary aquifer		Aquifer (Park City[3]–Tensleep aquifer)	Minor aquifer; Marginal aquifer	Phosphoria aquifer and confining unit[7]
PALEOZOIC	Pennsylvanian	Upper Pennsylvanian	Tensleep Sandstone		Major aquifer		Principal aquifer	Major aquifer		Major aquifer–limestone[5]	Tensleep aquifer[7]
PALEOZOIC	Pennsylvanian	Middle Pennsylvanian	Amsden Formation: Ranchester Limestone Member		Minor aquifer	Major regional confining unit	Leaky confining unit	Upper Amsden Fm–confining unit	Ranchester Limestone Member of Amsden Formation	Marginal aquifer	Amsden confining unit[7]
PALEOZOIC	Pennsylvanian	Lower Pennsylvanian	Amsden Formation: Horseshoe Shale Member					Darwin Sandstone Member of Amsden Formation	Horseshoe Shale Member of Amsden Fm (Amsden confining unit)		
PALEOZOIC	Mississippian	Upper Mississippian	Darwin Ss Mbr		Darwin Ss Mbr–Minor aquifer				Darwin Ss Mbr of Amsden Fm		
PALEOZOIC	Mississippian	Lower Mississippian	Madison Limestone		Major aquifer	Principal aquifer (Madison aquifer)	Principal aquifer	Major aquifer (Madison–Bighorn aquifer)	Aquifer (Madison aquifer)	Major aquifer–limestone	Madison aquifer[7]; Madison–Bighorn aquifer; Paleozoic aquifer system
PALEOZOIC	Devonian	Upper Devonian	Darby Formation: Three Forks Formation; Jefferson Formation		Three Forks and Jefferson Formations–aquitard/local confining unit and (or) minor aquifer		Jefferson Formation–Leaky confining unit			Major aquifer–limestone	Darby aquifer
PALEOZOIC	Devonian	Lower Devonian	Beartooth Butte Formation[2]	6			Principal aquifer				
PALEOZOIC	Silurian[6]										
PALEOZOIC	Ordovician	Upper Ordovician; Lower Ordovician	Bighorn Dolomite: Harding Sandstone equivalent		Major aquifer					Major aquifer–limestone	Bighorn aquifer
PALEOZOIC	Cambrian	Upper Cambrian	Gallatin Limestone and equivalent		Regional aquitard	Major regional confining unit	Leaky confining units	Confining unit	Confining unit (Gallatin–Gros Ventre confining unit)	Minor aquifer	Gallatin confining unit; Gallatin–Gros Ventre confining unit
PALEOZOIC	Cambrian	Middle Cambrian	Gros Ventre Formation and equivalent							Minor aquifer	Gros Ventre confining unit
PALEOZOIC	Cambrian	Middle Cambrian	Flathead Sandstone		Major aquifer (Flathead aquifer)	Principal aquifer (Flathead aquifer)	Principal aquifer	Major aquifer	Aquifer (Flathead aquifer)	Major aquifer–limestone[5]	Flathead aquifer
Precambrian			Precambrian rocks	7				Basal confining unit		Major aquitard	Precambrian basal confining unit

[1]Pliocene rocks not present in Bighorn Basin.

[2]Function of lithostratigraphic unit as hydrogeologic unit not defined.

[3]Park City Formation considered equivalent to all or parts of Phosphoria and Goose Egg Formations.

[4]Function of Muddy Sandstone as hydrogeologic unit not defined in WWC Engineering et al. (2007, fig. 4-9).

[5]Predominant lithology of formation is sandstone, and it is unknown why formation is defined as "Major aquifer–limestone" in WWC Engineering et al. (2007, fig. 4-9).

[6]Silurian rocks not present in Bighorn Basin.

[7]Tertiary, Mesozoic, and Paleozoic sedimentary-rock hydrogeologic units identified as continuing under the Absaroka Range and Yellowstone Volcanic Area.

Abbreviations used in the columns:
c.u. Confining unit
Fm Formation
Ss Sandstone
Mbr Member

Modified from Lowry et al. (1976); Libra et al. (1981); Western Water Consultants, Inc. (1982a,b; 1983b); Cooley (1984, 1986); Doremus (1986); Jarvis (1986a); Spencer (1986a); Love et al. (1993); and WWC Engineering et al. (2007)

Plate III. Relation of lithostratigraphic units to hydrogeologic units, Bighorn Basin, Wyoming.