

DESCRIPTION OF MAP UNITS

Qc COLLUVIUM --unconsolidated largely unstratified deposits at base of steep mountain slopes and along upper parts of stream valleys.

Qls LANDSLIDE DEPOSITS --predominantly coarse angular boulders making hummocky ridges at foot of steep slopes; debris is almost entirely from Wells Formation; breakaway surfaces are limestone or dolomite layers within the Wells Formation or underlying Mission Canyon Limestone.

Qm MORAINAL DEPOSITS --faceted, striated boulders and pebbles haphazardly mixed in finer grained matrix; restricted to cirques and upper parts of higher valleys.

Tt WELDED TUFF --light- to purple-gray crystalline tuff; contains abundant plagioclase crystals and lesser amounts of quartz and sanidine; ferromagnesian minerals are rare; composition varies from rhyolite to andesite; restricted to thin scattered erosional remnants in northeastern part of map area.

Kf FRONTIER FORMATION (2,000+ ft)--olive-brown to greenish-gray calcareous sandstone, mudstone, and shale; mudstone and shale comprise bulk of formation; sandstones are generally lenticular, medium to fine grained, and contain abundant chert grains; basal bed is a sandstone as much as 20 feet thick which contains sporadic chert and quartzite pebbles; upper part not exposed in map area.

Ka ASPEN SHALE (1,350-1,600 ft)--green to gray shale, siltstone, and sandstone with conspicuous minor amounts of red, green, and white porcellanite; many sandstones are highly siliceous and contain abundant black and white chert grains; lower contact is placed at lowest porcellanite bed.

Kb BEAR RIVER FORMATION (900-1,050 ft)--upper two-thirds is interbedded gray-green to black mudstone and shale, siltstone, and thin lenticular "salt and pepper" sandstone; lower one-third contains similar rocks but is predominantly gray to olive-gray, light-brown-weathering fine- to medium-grained siliceous sandstone.

Kg GANNETT GROUP:
Kgu UPPER UNIT (250 ft)--includes, in descending order and in beds too thin to map separately, Draney Limestone, Buchler Formation, and Peterson Limestone; limestones are dark gray to brownish gray, light gray weathering, sublithographic, and thin bedded; mudstones are red to brown with a few interbedded thin lenticular "salt and pepper" fine-grained sandstones.

Ke EPHRAIM CONGLOMERATE (500 ft)--heterogeneous unit of interbedded lenticular, earthy sandstone, siltstone, and mudstone with pebble conglomerate lenses; dominantly red but includes gray-green, purple, and light-gray beds; crossbedding is conspicuous in sandy beds; conglomerate lenses most abundant in lower one-half of formation.

Jsp STUMP AND PREUSS SANDSTONES (190-200 ft)--Stump Sandstone is a gray-green crossbedded to platy-bedded medium-grained glauconitic calcareous sandstone and some interbedded brown-weathering sandy crossbedded limestone; ranges in thickness from 100 to 135 feet. Preuss Sandstone is a very fine grained red friable muddy thinly laminated sandstone or siltstone; ranges in thickness from 0 to 80 feet.

Jt TWIN CREEK LIMESTONE (850-900 ft)--predominantly dark-gray thin-bedded shaly limestone that characteristically weathers to light-gray splintery finger-sized fragments; upper 25 to 35 feet is dark- to medium-gray, yellowish-gray-weathering medium-bedded sandy limestone with some oolitic beds that are more resistant to weathering than underlying beds; similar sandy and oolitic limestone beds occur in lower one-third of unit; basal 75 to 100 feet of formation consists of red siltstone, limestone breccia, and sporadic gypsum.

Jn NUGGET SANDSTONE (250-300 ft)--orange to pale-red-brown crossbedded to massive fine-grained quartzitic sandstone; has sporadically distributed coarse grains of frosted quartz and usually outcrops in low bouldery ridges.

Ja ANKAREH FORMATION (300-500 ft)--red crossbedded to platy-bedded hematitic very fine grained sandstone and siltstone interbedded with red to purple mudstone; a few thin white platy to nodular limestone beds are present near middle of formation.

Jt THAYNES FORMATION (300-700 ft)--northeast of Absaroka fault, approximately 300 feet of tan to gray-brown, light-brown-weathering fine-grained thin-bedded silty limestone and interbedded calcareous siltstone; limy beds form a series of low ridges separated by the less resistant siltstone beds; southwest of Absaroka fault, approximately 700 feet of blue- to greenish-gray, tan to light-brown-weathering thin- to medium-bedded medium- to coarse-grained bioclastic limestone with some interbedded red to brown calcareous siltstone and sandstone near base of unit; lowest limestone beds weather to distinctive blackish brown.

Jw WOODSIDE FORMATION (400-950 ft)--red thin even-bedded very fine grained friable calcareous sandstone, siltstone, and mudstone; approximately 400 feet thick southwest of Absaroka fault; as much as 950 feet thick northeast of Absaroka fault and contains a thin light-tan, yellow-brown-weathering medium-bedded fine-grained limestone unit approximately 200 feet below top of formation.

Jd DINWOODY FORMATION (600 ft)--reddish-brown to greenish-gray thin- to medium-bedded dolomitic siltstone with some interbedded blue-gray thin-bedded fine-grained silty limestone; weathers to brown and greenish-gray slabby to flaggy rubble.

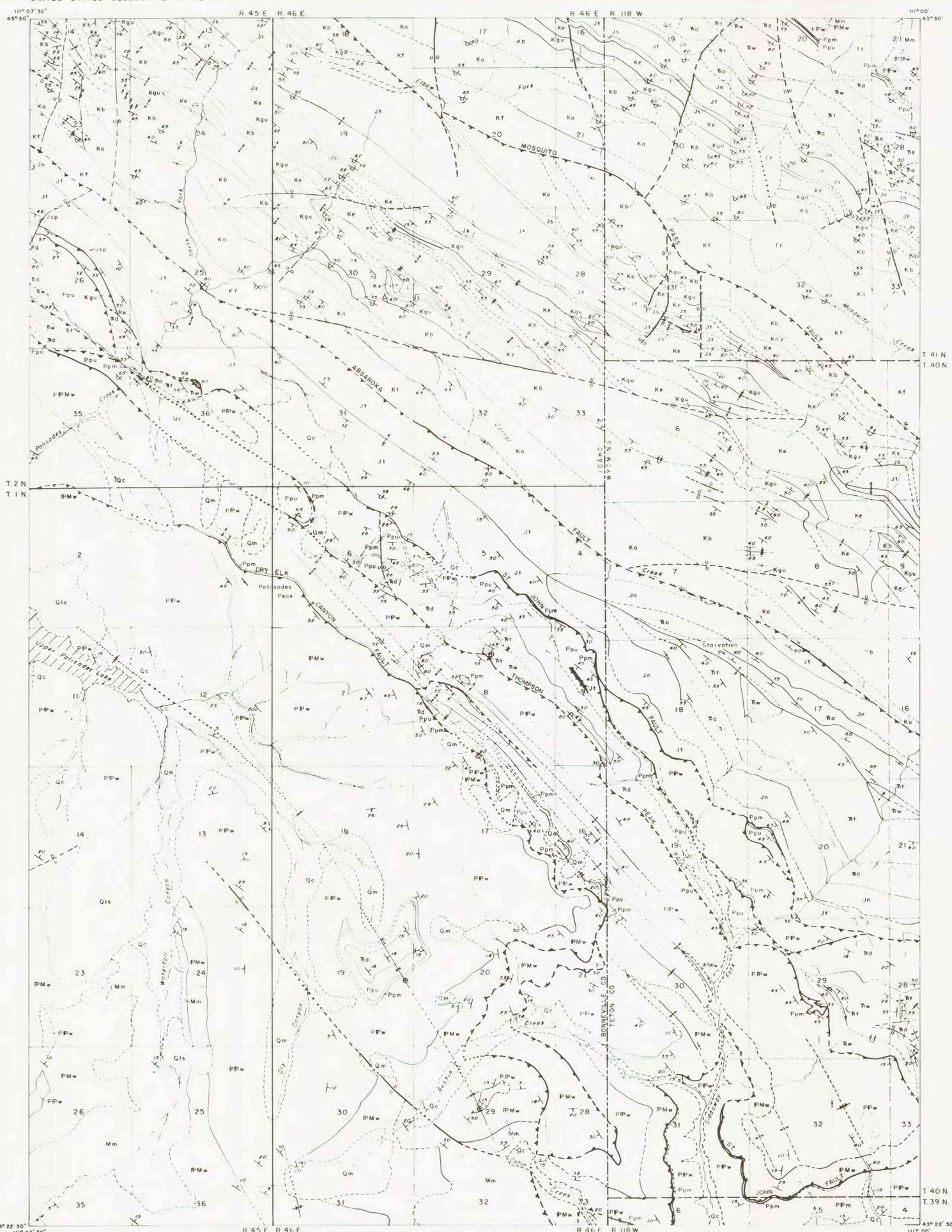
Ppu PHOSPHORIA FORMATION AND STRATIGRAPHIC EQUIVALENTS:
UPPER PART, INCLUDES TONGUES OF PARK CITY FORMATION AND SHEDHORN SANDSTONE (160-180 ft)--dominantly light-brown medium-bedded fine-grained slightly calcareous phosphatic sandstone of the Shedhorn and black phosphatic Retort Phosphatic Shale Member of the Phosphoria underlain by interbedded light-gray medium-bedded cherty limestone and dolomite of the Park City.

Ppm MEADE PEAK PHOSPHATIC SHALE MEMBER (30-60 ft)--blue- to brownish-black interbedded phosphatite, phosphatic shale, chert, siltstone, and dolomite; all beds are thin; phosphatite, dolomite, and chert most abundant near base and top of member, and shale and siltstone most abundant in middle.

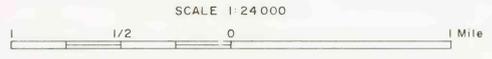
PPw WELLS FORMATION AND ASSOCIATED ROCKS:
UPPER UNIT (1,000 ft)--lower three-fourths of unit consists of white, yellow-gray, and brownish-gray crossbedded to massive medium- to thick-bedded medium-grained quartzite and a few interbedded light-gray, white-weathering medium-bedded medium- to fine-grained dolomite beds. Lower one-fourth of unit has more dolomite and some light-gray medium-bedded saccharoidal limestone beds.

PPw LOWER UNIT (325-700 ft)--upper two-thirds dominantly medium-gray massive- to medium-bedded medium-grained limestone with abundant chert nodules that are more abundant near top of unit; also includes some coarse-grained bioclastic limestone and some limestone breccia; lower one-third is dominantly red and yellow siltstone, mudstone, and interbedded gray, red-stained limestone breccia with a thin but persistent light-grayish-brown, tan-weathering crossbedded medium- to fine-grained sandstone at top.

Mm MISSION CANYON LIMESTONE (900-1,000 ft)--dominantly medium-gray, light-gray-weathering massive- to thick-bedded fine- to medium-grained limestone; contains many bioclastic beds throughout, and upper one-third of unit contains several thin brownish-gray, dark-brown-weathering saccharoidal dolomitic limestone and dolomite and massive lenticular limestone solution breccias, some of which are stained red and pink from interstitial red silt.



Planimetric base from orthophotomap from aerial photographs taken 1954



Geology mapped in 1963-64 Assisted by M. L. Schroeder, 1963 and W. E. Bowers, 1964

EXPLANATION	Geological Period	Stratigraphic Group
Qc	QUATERNARY	Recent
Qm		
Qls	TERTIARY	Pliocene
Tt		
Kf	CRETACEOUS	Upper Cretaceous
Ka		
Kb		Lower Cretaceous
Kg, Kgu, Ke		
Ke	JURASSIC	Upper Jurassic
Jsp		Middle and Upper Jurassic
Jt		Lower Jurassic
Jn		Upper Triassic
Ja	TRIASIC	Lower Triassic
Jt		
Jw	MISSISSIPPIAN PENNSYLVANIAN PERMIAN	
Jd		
Ppu, Ppm, PPw, Mm	CARBONIFEROUS	
PPw		

PRELIMINARY GEOLOGIC MAP OF THE PALISADES PEAK QUADRANGLE, BONNEVILLE COUNTY, IDAHO, AND TETON COUNTY, WYOMING