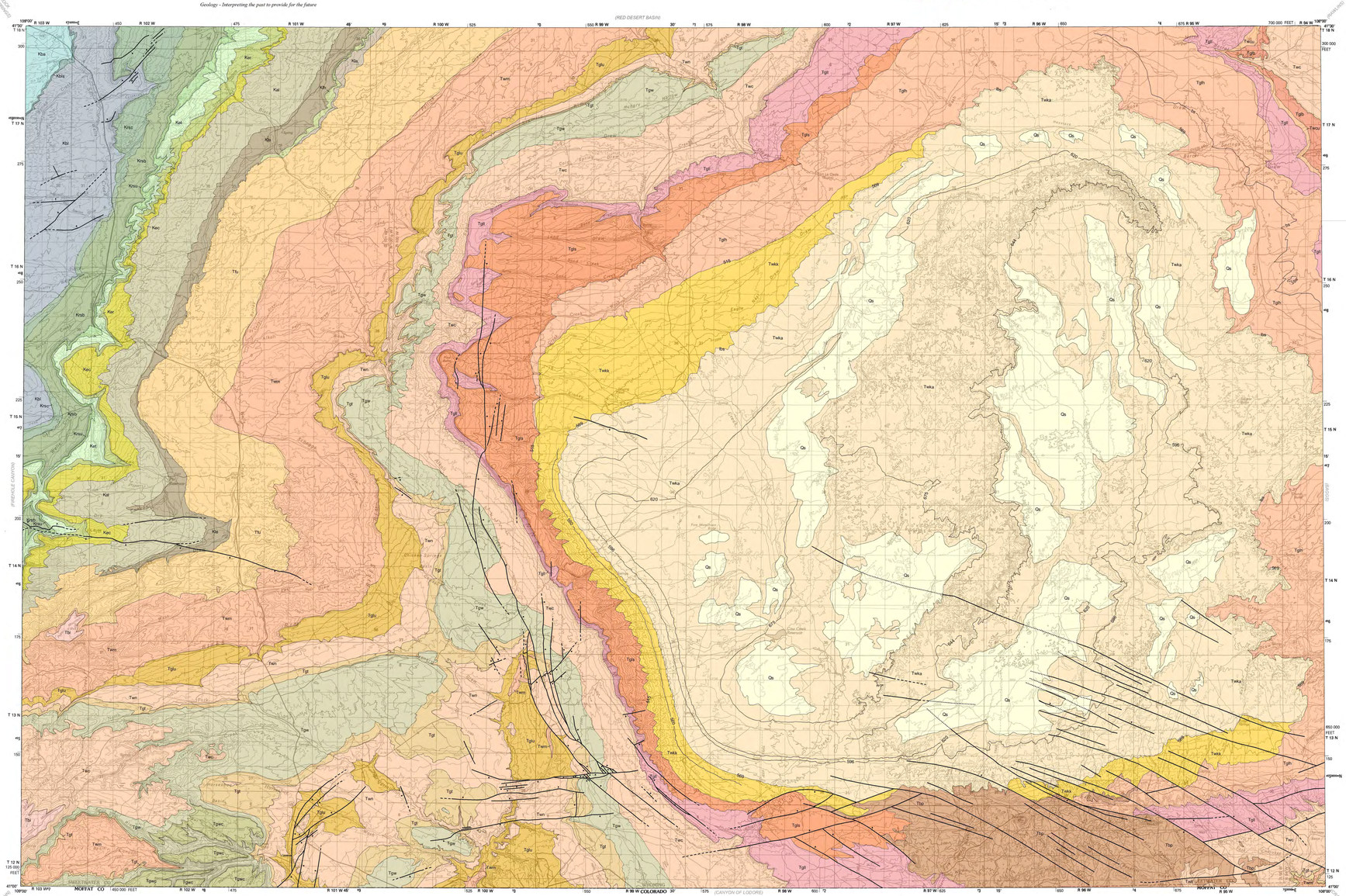
WYOMING STATE GEOLOGICAL SURVEY
Lance Cook, State Geologist
Laramie Wyoming

Geology - Interpreting the past to provide for the future

USGS science for a changing world

Prepared in cooperation with the U.S. GEOLOGICAL SURVEY

OPEN FILE REPORT 04-5
Kinney Rim 1:100,000 - scale Geologic Map



Projection: Universal Transverse Mercator (UTM), zone 12
North American Datum of 1927 (NAD 27)
10,000-meter grid ticks: UTM, zone 12
25,000-foot grid ticks: Wyoming State Plane Coordinate System, West Central zone

MN
GN
0°21'
6 MILS
11.5°
204 MILS

UTM GRID CONVERGENCE (GN)
1982 MAGNETIC DECLINATION (MN) AT CENTER OF SHEET
DIAGRAM IS APPROXIMATE

0 1 2 4 6 8 10 12 14 16 18 20 Kilometers
0 1 2 3 4 5 6 7 8 9 10 11 12 Miles

SCALE 1:100,000
Contour Interval 20 meters

0 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000 18,000 20,000 Meters
0 5,000 10,000 15,000 20,000 25,000 30,000 35,000 40,000 45,000 50,000 55,000 60,000 65,000 Feet

GEOLOGIC MAP OF THE KINNEY RIM 30' x 60' QUADRANGLE, SWEETWATER COUNTY, WYOMING AND MOFFAT COUNTY, COLORADO

by

Henry W. Roehler, 2004, digitized and modified from Henry W. Roehler, 1985

Prepared in cooperation with the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under Cooperative Agreement Number 03HQAG0097

Geology Mapped in 1968-1975; motions on selected faults from detailed maps shown on Index to geologic mapping.

Digital cartography by Robin W. Lyons and Joseph M. Huss

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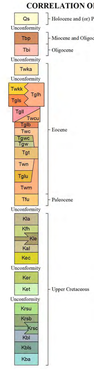
A digital version of this map is also available on CD - ROM.

EXPLANATION

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Quaternary surficial deposits

Qs — **Sand Dunes (Holocene and/or Pleistocene)**—Elongated dunes, stabilized by desert vegetation. Thickness 0 to 33 feet (0 to 10 m)

Tertiary sedimentary rocks

Tbp — **Browns Park Formation (Miocene and Oligocene)**—Gray, fine- to coarse-grained, tuffaceous sandstone and interbedded gray to white tuff, gray siltstone, and gray and red mudstone. Thickness 0 to 623 feet (0 to 190 m)

Tbi — **Bishop Conglomerate (Oligocene)**—Reddish-brown conglomerate composed of subangular to subrounded boulders, cobbles, and pebbles of granite, gneiss, quartzite, chert, sandstone, and limestone. Thickness 0 to 197 feet (0 to 60 m)

Washakie Formation (Eocene)

Twka — **Adobe Town Member**—Interbedded gray to gray-green, fine- to very coarse-grained, partly tuffaceous sandstone; gray and red, calcareous, tuffaceous siltstone; gray, green, or variegated mudstone; brown and gray, silty limestone; yellow-brown, silty dolomite; green, blue-green, and gray tuff; and tan and gray conglomerate. Thickness 984 feet (300 m)
—675— Marker bed 675
—644— Marker bed 644—Upper red marker
—620— Marker bed 620—White tuff
—596— Marker bed 596—Middle red marker
—569— Marker bed 569
— lbs — Lower brown sandstone

Twkk — **Kinney Rim Member**—Interbedded gray, gray-green, or variegated mudstone; gray to gray-green, very fine- to medium-grained sandstone; yellow-gray, gray-brown, and gray-green tuff; tan-gray and gray-brown limestone; gray and gray-green tuffaceous siltstone; algal limestone; and thin, lenticular conglomerate. Thickness 0 to 984 feet (0 to 300 m)
—560— Marker bed 560—Lower red marker
—515— Marker bed 515

Green River Formation (Eocene)

Tgh — **Harrt Cabin Bed of Laney Member**—Interbedded gray and tan, fine- to coarse-grained sandstone; gray and brown siltstone; gray, brown, and green mudstone; gray and brown shale; brown oil shale; gray or white tuff; limestone; and dolomite. Thickness 0 to 689 feet (0 to 210 m)
— bs — Barrel Springs white layer

Tgls — **Sand Butte Bed of Laney Member**—Interbedded tan to gray, partly tuffaceous, very fine- to coarse-grained sandstone; tan to gray, mostly tuffaceous siltstone; gray-green to gray-brown mudstone; gray limestone; gray, mollusk-bearing limestone; algal limestone; tan-gray and white tuff; and brown oil shale. Thickness 0 to 984 feet (0 to 300 m)

Tgll — **LaClede Bed of Laney Member**—Mostly brown to black oil shale. Some interbedded buff, tuffaceous siltstone, olive-gray marlstone, tan to gray tuff, gray and brown mudstone, gray-brown and tan-brown dolomite, algal limestone, buff limestone, gray-green claystone, and gray-green, fine-grained sandstone. Thickness 459 to 591 feet (140 to 180 m)

Tgb — **Basal unnamed tongue of Laney Member**—Interbedded gray, fine-grained sandstone; brown oil shale; green mudstone; gray-green shale; and gray ostracodal, oolitic, and algal limestone. Thickness 49 feet (15 m)

Tgwc — **Conglomerate facies of Wilkins Peak Member**—Brown conglomerate composed of rounded cobbles and pebbles of gray, tan, and red quartzite, varicolored chert, and gray limestone. Interbedded varicolored, tuffaceous mudstone; varicolored, tuffaceous sandstone; brown, tuffaceous siltstone; and a few thin beds of tan algal limestone. Thickness 0 to 394 feet (0 to 120 m)

Tgw — **Main part of Wilkins Peak Member**—Interbedded brown oil shale, gray and brown mudstone, gray claystone, tan and gray-brown limestone, gray oolitic limestone, tan siltstone, and gray, very fine-grained sandstone. Thickness 0 to 607 feet (0 to 185 m)

Tgt — **Tipton Shale Member**—Gray to brown oil shale; interbedded gray-brown oolitic limestone, gray-brown siltstone, and shale; tan to gray-brown algal limestone; and gray, fine-grained mollusk-bearing sandstone. Unit is called Tipton Tongue where overlying unit is the Cathedral Bluffs Tongue of the Wasatch Formation. Thickness 49 to 328 feet (15 to 100 m)

Tglu — **Luman Tongue**—Mostly brown oil shale and thin, interbedded gray-brown coquinal limestone; gray, fine-grained calcareous sandstone; gray siltstone; gray to gray-brown claystone and mudstone; brown to black carbonaceous shale; and brown-gray dolomite. Thickness 0 to 443 feet (0 to 135 m)

Wasatch Formation (Eocene)

Twcu — **Upper unit of Cathedral Bluffs Tongue**—Green, gray, and some variegated mudstone, and interbedded gray, fine- to coarse-grained, arkosic sandstone. Thickness 0 to 98 feet (0 to 30 m)

Twc — **Cathedral Bluffs Tongue**—Gray, green, and variegated mudstone; interbedded gray, fine- to coarse-grained, partly crossbedded sandstone; and minor thin beds of gray-brown shale, algal limestone, oolitic limestone, and gray calcareous siltstone. Thickness 558 to 1312 feet (170 to 400 m)

Twn — **Niland Tongue**—Interbedded brown-gray shale; gray, fine-grained sandstone; gray limestone; brown and gray carbonaceous shale; coal; and brown oil shale. Thickness 0 to 427 feet (0 to 130 m)

Twm — **Main body**—Interbedded gray claystone; gray, green, and variegated mudstone; gray and brown fossiliferous limestone; gray, fine- to medium-grained sandstone; gray calcareous siltstone; gray and brown carbonaceous shale; and coal. Thickness 1312 to 2133 feet (400 to 650 m)

Tu — **Fort Union Formation (Paleocene)**—Gray shale; interbedded gray siltstone; gray, very fine- to coarse-grained sandstone; gray and brown carbonaceous shale; and coal. Thickness 1214 to 1608 feet (370 to 490 m)

Upper Cretaceous sedimentary rocks

Kla — **Lance Formation**—Dark-gray shale, interbedded gray, very fine-grained sandstone, dark-gray carbonaceous shale, coal, and gray, silty dolomite. Thickness 0 to 197 feet (0 to 60 m)

Kfh — **Fox Hills Sandstone**—Gray, fine-grained sandstone, tan and gray siltstone, and interbedded dark-gray shale. Thickness 0 to 246 feet (0 to 75 m)

Kle — **Lewis Shale**—Dark-gray shale and thin interbedded gray siltstone and sandstone. Thickness 0 to 607 feet (0 to 185 m)

Mesaverde Group

Kal — **Almond Formation**—Gray, very fine-grained sandstone and interbedded gray shale, gray siltstone, brown and gray carbonaceous shale, and coal. Thickness 623 to 919 feet (190 to 280 m)

Ericson Sandstone

Kec — **Canyon Creek zone of Smith (1961)**—Light-gray, fine- to very coarse-grained, cross-bedded sandstone. Thickness 344 to 410 feet (105 to 125 m)

Ker — **Rusty zone of Smith (1961)**—Gray, fine- to medium-grained sandstone and interbedded gray, partly hematitic siltstone and gray, silty shale. Thickness 295 to 328 feet (90 to 100 m)

Ket — **Trail zone of Smith (1961)**—Light-gray, very fine- to fine-grained, crossbedded sandstone and sparse, thin, interbedded, gray, shaly siltstone. Thickness 443 to 558 feet (135 to 170 m)

Rock Springs Formation

Krsu — **Upper part consisting of the Brooks, Coulson, McCourt, and Gottsche Tongues of Smith (1963)**—Gray, fine-grained sandstone; and interbedded gray, calcareous siltstone, gray shale, gray and brown carbonaceous shale, and a few very thin beds of coal. Thickness 197 to 246 feet (60 to 75 m)

Krsb — **Black Butte Tongue of Hale (1950)**—Gray, silty shale; and very thin, interbedded gray siltstone and gray, very fine-grained sandstone. Thickness 738 to 919 feet (225 to 280 m)

Krsc — **Chimney Rock Tongue of Hale (1950)**—Gray, fine-grained sandstone and some interbedded gray siltstone and gray shale. Thickness 98 to 180 feet (30 to 55 m)

Blair Formation

Kbl — **Main body**—Gray shale and thin, interbedded gray siltstone and gray, fine-grained sandstone. Thickness 1394 to 1624 feet (425 to 495 m)

Kbls — **Basal sandstone**—Gray, very fine- to fine-grained sandstone and interbedded gray siltstone and gray silty shale. Thickness 344 to 410 feet (105 to 125 m)

Kba — **Baxter Shale**—Dark-gray shale interbedded with a few very thin beds of gray siltstone. Thickness 2297 feet (700 m); only the upper 623 feet (190 m) are exposed in the quadrangle

MAP SYMBOLS

Contact

Fault—Dashed where inferred; dotted where concealed

Named or numbered marker bed

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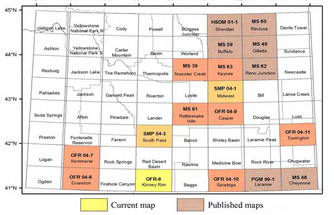

INDEX TO 1:100,000-SCALE BEDROCK GEOLOGIC MAPS OF WYOMING

KEY TO ABBREVIATIONS

Wyoming State Geological Survey maps: Map Series (MS), Open File Report (OFR), Preliminary Geologic Map (PGM), Hazards Section Digital Map (HSDM), and unpublished STATEMAP project (SMP).

INDEX MAP SHOWING SOURCES OF GEOLOGIC MAPPING

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