WYOMING STATE GEOLOGICAL SURVEY
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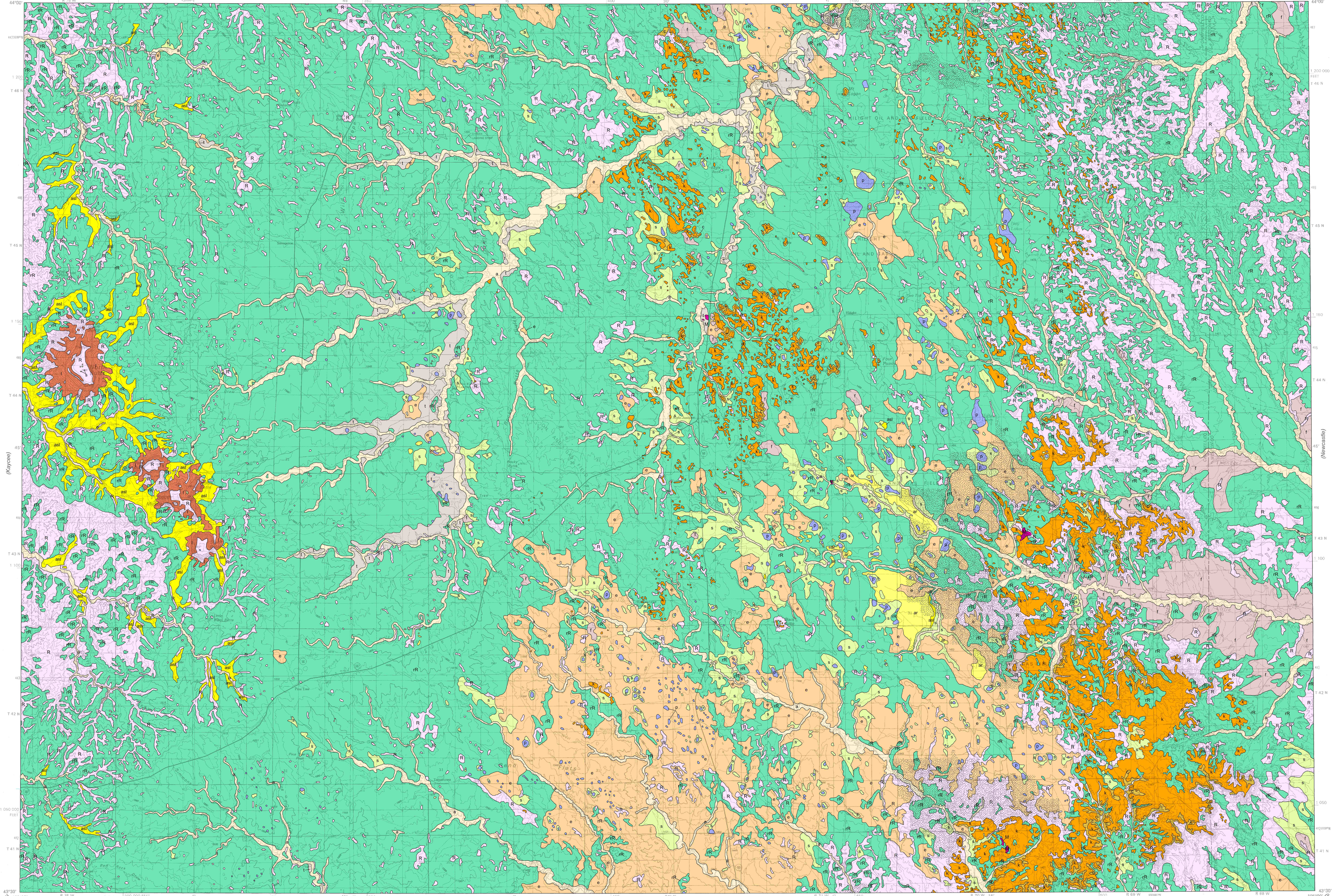
Laramie, Wyoming

Geology - Interpreting the past to provide for the future

Prepared in cooperation with the U.S. GEOLOGICAL SURVEY

OPEN FILE REPORT 07-8
Reno Junction 1:100,000 - scale Surficial Geologic Map



Base map from U.S. Geological Survey 1:100,000-scale metric topographic map of the Reno Junction, Wyoming Quadrangle, 1974.

Projection: Universal Transverse Mercator (UTM), zone 13
North American Datum of 1927 (NAD 27)
10,000-meter grid: UTM, zone 13
50,000-foot grid ticks: Wyoming State Plane Coordinate System, east zone.

MN
GN
0° 21'
6 MILS
11° 30'
204 MILS

UTM GRID CONVERGENCE (GN)
1974 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 4 6 8 10 12 Miles

SCALE 1:100,000
Contour Interval 20 meters

0 1,000 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000 18,000 20,000 Meters
0 2,500 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

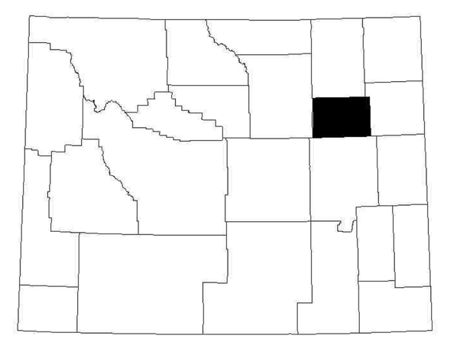
SURFICIAL GEOLOGIC MAP* OF THE RENO JUNCTION 30' x 60' QUADRANGLE, CAMPBELL AND WESTON COUNTIES, WYOMING

by

Marith C. Reheis and Donald A. Coates

2007

*This map was digitized and modified to match the classification scheme and conventions used by the Wyoming State Geological Survey on adjoining digital surficial quadrangle maps. Based on original mapping published by Reheis and Coates (1987).



WYOMING QUADRANGLE LOCATION

Prepared in cooperation with and research supported by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under USGS award number 07HQA60144. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

Digital cartography by Thomas E. Ver Ploeg

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Additional copies of this map can be obtained from:
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CLASSIFICATION AND DESCRIPTION OF MAP UNITS

(see Reheis and Coates, 1987, for origin of units and their position in the landscape)

Alluvial deposits

Alluvium

a — On floodplains and low terraces as much as 3 m (10 feet) above stream beds; sand and silt interbedded with cross-bedded gravel lenses; pebbles of sandstone, ironstone, fossil wood, and lithologies derived from White River Formation are common (101)

Residual gravel and weathered bedrock

ar — Discontinuous patches of alluvial stream deposits composed of sand, silt, and gravel which occur with residuum. Pebbles of sandstone, ironstone, fossil wood, and lithologies derived from White River Formation are common (102)

Valley fill deposits

asl — Alluvial, slopewash, and landslide deposits filling valleys cut into Wasatch Formation and then incised after deposition; consists of silt, clay, and some sand, occasionally interbedded with gravel lenses. Gravels consist of small commonly iron-stained pebbles of sandstone, ironstone, and locally lithologies derived from the White River Formation. Surround Pumpkin Buttes, mainly on west side; close to Pumpkin Buttes, boulders of conglomerate from landslides of White River Formation commonly found at surface, but may also occur at depth, interbedded with finer sediments (103)

Alluvial fan and pediment deposits

f — Upper 0.3 to 3 m (1 to 10 feet) commonly sheetwash alluvium, commonly grades downward into stream alluvium of sand and silt containing abundant small lenses of angular to subangular gravel; on pediments, sheetwash alluvium may overlie bedrock (201)

Terrace deposits

t — Alluvium on lower terrace 5 to 25 m (16 to 82 feet) above Belle Fourche River and 3 to 20 m (10 to 70 feet) above smaller tributaries, on upper terrace 5 to 7 m (16 to 23 feet) above lower terrace; alluvium on two terrace levels on Pumpkin Creek drainage north of Pumpkin Buttes are 7 to 30 m (16 to 98 feet) above present stream beds; and alluvium on terraces in valleys draining to the southeast are 3 to 10 m (10 to 33 feet) above streams. Sand and silt interbedded with cross-bedded gravel lenses; pebbles of sandstone, ironstone, fossil wood, and lithologies derived from White River Formation are common (601)

Eolian deposits

e — Windblown sand in dunes or sand and silt in discontinuous sheets of irregular thickness blanketing terrain; massive to faintly bedded; includes small areas of residuum. Dunes, now stabilized by grass in most places, formed by deposition of sand from poorly cemented outcrops of Wasatch Formation and from alluvium in stream valleys; sheets of sand and silt (loess) deposited in extensive areas (701)

Landslide deposits

l — Blocks of conglomerate, sandstone, and siltstone that have been moved, broken, and mixed with finer sediments. Characterized by hummocky terrain; bounded upslope by crescentic scarps and downslope by lobate toes. Some older landslides are stabilized and vegetated and their topography has been modified by erosion; younger landslides have fresh scarps, little vegetation, and may be still active (801)

Playa lake deposits

p — Massive to thinly bedded gray clay and silt; white alkali in some places. Deposited by wind and sheetwash into ephemeral lakes; located in natural closed depressions in gentle terrain, probably related to blowouts associated with eolian deposits (1001)

Sheetwash

s — Alluvium composed of sand, silt, and clay with minor interbeds of gravel. Mostly reworked material derived from higher slopes and deposited by unchanneled flow of water (sheetwash) on hill slopes into gently sloping valley bottoms and in upland depressions; commonly associated with eolian deposits; includes small areas of residuum (rR) and eolian (e) deposits (1101)

Colluvium

c — Angular bedrock fragments as large as boulders mostly of baked and fused rock (clinker), in an unsorted matrix of sand silt, and clay. Locally includes small areas of clinker (k), residiuum (rR), and small or indistinct landslide deposits (l) (1201)

Residuum on bedrock

rR — Gray to brown sand and silt with variable clay content grading downward into unweathered bedrock (see Reheis and Coates, 1987, for specific formations); locally contains sheetwash alluvium (s) or eolian deposits (e) in upper 1 m (3 feet) or near the surface (1401)

Bedrock

R — Includes White River Formation (erosional remnants of white tuff and bentonitic claystone in upper part; lower part is cross-bedded, coarse-grained sandstone and conglomerate cemented by chalcedony; conglomerate pebbles are quartz, quartzite, limestone, chert, and gneiss similar to rocks exposed in Bighorn Mountains to west), Wasatch Formation (brown and gray claystone and siltstone with thick lenses of coarse-grained, cross-bedded arkosic sandstone; poorly consolidated with some well-cemented, resistant sandstone beds; thin beds of coal and carbonaceous shale common locally), and Fort Union Formation (light-gray to yellowish brown, fine-grained sandstone, light-gray siltstone, mudstone, and shale, brown carbonaceous shale, and coal) (1501)

Clinker

k — Baked and fused bedrock (Wasatch and Fort Union formations) altered by *in situ* burning of coal beds. Mostly hard, dense, red to orange baked shale and siltstone (porcellenite); some black, bubbly, sometimes glassy rock (buchite); resembles volcanic rocks and slag formed by melting of rocks. Gray or white coal ash occurs as layer 5 cm to 1.2 m (2 inches to 3.9 feet) thick at base of baked zone; thick layer caps relatively flat upland surfaces on Fort Union Formation and on top of hills and ridges and as narrow bands on hill sides of Wasatch Formation

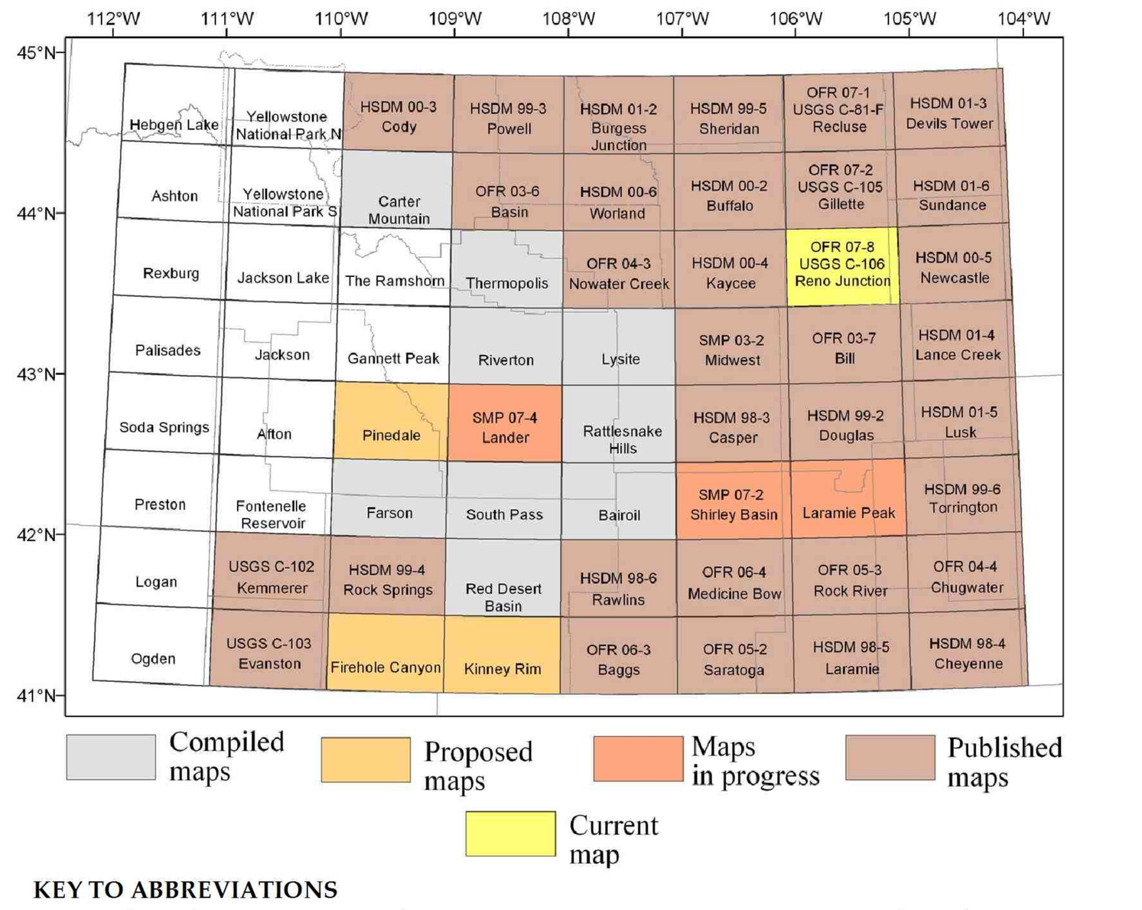
Disturbed or mined areas

M — Primarily artificial fill consisting of disturbed soil and rock from mining and construction operations as originally mapped by Reheis and Coates (1987); mapped only where terrain modifications obscure nature of natural surficial deposits (1701)

Areas of surface disturbance from active and reclaimed surface coal mines and related coal mining operations; data through 2006, courtesy of Edward L. Heffern, U.S. Bureau of Land Management, from mine plan annual reports.

REFERENCE CITED

Reheis, M.C., and Coates, D.A., 1987, Surficial geologic map of the Reno Junction 30' x 60'Quadrangle, Campbell and Weston Counties, Wyoming: U.S. Geological Survey Coal Investigations Map C-106, scale 1:24,000, color.



KEY TO ABBREVIATIONS
U.S. Geological Survey maps: Coal Investigations Series (C). Wyoming State Geological Survey maps: Open File Report (OFR), Hazards Section Digital Map (HSDM), and unpublished STATEMAP project (SMP).

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

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