WYOMING STATE GEOLOGICAL SURVEY
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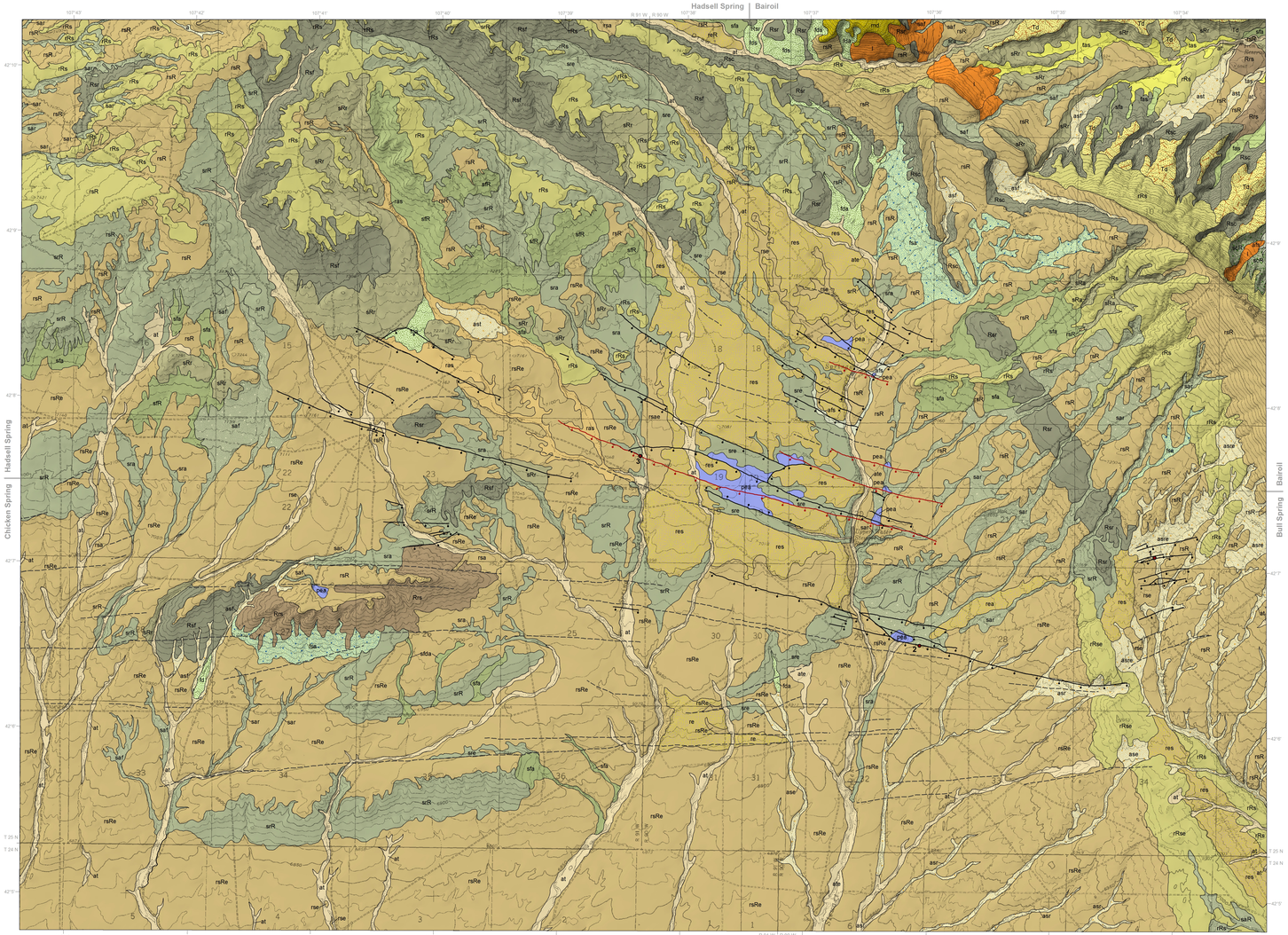
Geology - Interpreting the past - Providing for the future

OPEN FILE REPORT 14-4
Chicken Spring Area 1:24,000-scale Surficial Geologic Map



Base map created from U.S. Geological Survey 1:24,000-scale topographic maps of parts of four quadrangles: Bairoil, 1961, photorevised 1981; Bull Springs, 1960, photorevised 1982; Chicken Spring, 1960, photorevised 1981; and Hadsell Spring, 1961, photorevised 1981

Base hillshade derived from USDA/NRCS--National Cartography & Geospatial Center 10-meter Digital Elevation Model (DEM), 2000; azimuth 315, sun angle 45, vertical exaggeration 1

Projection: Universal Transverse Mercator (UTM), zone 13 North American Datum of 1927 (NAD 27)

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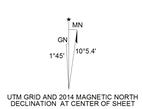

UTM GRID AND 2014 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24,000

1 0.5 0 1 Mile

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometer

HADSELL SPRING CONTOUR INTERVAL 20 FEET
CHICKEN SPRING CONTOUR INTERVAL 10 FEET
BAIROIL CONTOUR INTERVAL 20 FEET
BULL SPRINGS CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

Digital cartography by John P. Flaherty
Map Edited by Suzanne C. Luhr

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SURFICIAL GEOLOGIC MAP OF THE CHICKEN SPRING AREA, SWEETWATER COUNTY, WYOMING

by

Seth J. Wittke, John P. Flaherty, and Martin C. Larsen

2014

EXPLANATION

DESCRIPTION OF MAP UNITS

Alluvium—Unconsolidated detrital material deposited during recent geologic time by a stream or other body of running water, as a sorted or semi-sorted sediment in the bed of a stream or on its floodplain or delta, or as a cone or fan at the base of a mountain slope; stream and river deposits; does not include subaqueous deposits in seas, estuaries, lakes, or ponds

- Alluvium (**a**)
- Alluvium and alluvial fan deposits with minor components of slopewash (**afs**)
- Alluvium and slopewash with minor components of eolian deposits (**ase**), alluvial fan deposits (**asf**), residuum (**asr**), eolian deposits (**asre**), and terrace deposits (**ast**)
- Alluvium and terrace deposits (**at**) with minor components of eolian deposits (**ate**)

Terrace deposits—Relict alluvial deposits on relatively flat, horizontal, or gently inclined surfaces which are bounded by a steeper ascending slope on one side, and a steeper descending slope on the opposite side

- Terrace deposits with minor components of slopewash (**tas**)

Structural terrace deposits—Terraces cut in bedrock that are mantled with a thin veneer of alluvium

- Structural terrace deposits (**Td**)

Alluvial fan deposits—Fan-shaped deposits made by streams or debris flows, where they have run out into a level (or nearly level) plain

- Alluvial fan and alluvial deposits, and slopewash (**fas**)
- Dissected alluvial fan deposits (**fd**) with minor components of alluvium (**fda**) and slopewash (**fds**)
- Alluvial fan and slopewash deposits with minor components of alluvium (**fsa**)

Mesa—An isolated, nearly level landmass standing distinctly above the surrounding country, bounded by abrupt or steeply sloping erosion scarps on all sides, and capped by layers of resistant, nearly horizontal rock; a bedrock capped plateau or tableland

- Dissected mesa (**md**)

Playa lake deposits—Materials deposited from broad, shallow sheets of water which quickly gather and evaporate, leaving mud flats, evaporite deposits, or both (depending on chemical composition of the waters and degree of evaporation)

- Playa deposits with eolian deposits and minor components of alluvium (**pea**)

Landslide deposits—Soil and rock material that has moved downslope, usually en masse, under gravitational influence; earth and rock which became loosened from a hillside, and slid, flowed, or fell down the slope

- Landslide deposits (**l**)

Slopewash—Soil and rock material that has moved down a slope by gravity assisted by running water

- Slopewash and alluvium with minor components of alluvial fan deposits (**saf**), residuum (**sar**), and bedrock outcrops (**saR**)
- Slopewash and colluvium with minor components of alluvium (**sca**) and bedrock outcrops (**scR**)
- Slopewash and alluvial fan deposits with minor components of alluvium (**sfa**), dissected alluvium (**sfda**), bedrock (**sfR**)
- Slopewash and bedrock outcrops with minor components of alluvium (**sRa**), colluvium (**sRe**), and residuum (**sRr**)
- Slopewash and residuum with minor components of eolian deposits (**sre**), alluvium (**sra**), and bedrock outcrops (**srR**)

Residuum—A residual deposit remaining in place after the decomposition of bedrock; an accumulation of rock debris formed by weathering and remaining essentially in place after all but the least soluble constituents have been removed, usually forming a comparatively thin surface layer concealing the unweathered or partially altered bedrock below

- Residuum and alluvium with minor components of slopewash (**ras**)
- Residuum and eolian deposits (**re**) with minor components of slopewash (**res**), alluvium deposits (**rea**), and bedrock outcrops (**reR**)
- Residuum and bedrock outcrops with minor components of slopewash (**rRs**) and eolian deposits (**rRse**)
- Residuum and slopewash with minor components of alluvium (**rsa**) with eolian deposits (**rsae**), eolian deposits (**rse**), and bedrock outcrops (**rsR**) with eolian deposits (**rsRe**)

Bedrock outcrops— Areas where the underlying bedrock is exposed and unaltered (usually lithified) at the surface

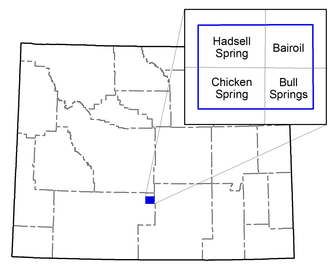
- Bedrock outcrops and residuum with minor components of slopewash (**Rrs**)
- Bedrock outcrops and slopewash with minor components of residuum (**Rsr**), colluvium (**Rsc**), and fan deposits (**Rsf**)

MAP SYMBOLS

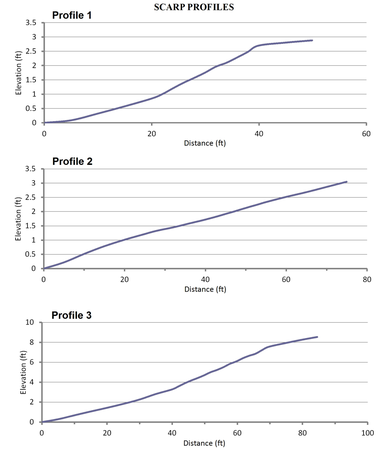
Quaternary faults—Faults which show surface offset of Quaternary-aged units

Chicken Springs Faults—The Chicken Springs Faults are poorly understood "young" normal faults. The faults are primarily constrained to an 8-15 km area within the map, however some seemingly older strands extend beyond the map area. Faults show offset to the north and the south along a general strike of N79°W. The degree of dip is unknown. Three of the fault strands show Holocene displacement in ephemeral stream beds. Other faults in the area show minimal or unobservable offset in surficial deposits. Many of the non-Holocene faults are apparent on the aerial photography due to more vigorous sagebrush growth, possibly caused by shallower groundwater along the fault trace. The age of these faults could not be determined during the completion of this map. The slip rate of the faults is considered to be less than 0.2 mm/yr and no recurrence interval has been assigned by the U.S. Geological Survey. No historic earthquakes have been associated with these faults (Machette, 1999).

- **Holocene fault**—Faults that show potential Holocene offset, determined by small 0.1-1.0 m scarps crossing ephemeral stream beds, forming half-grabens and grabens.
- **Quaternary fault**—Faults that influence over-land water flow and dictate location and direction of playas, stream beds, and other alluvial features. Faults in this category do not show offset in playas or alluvium.
- **Quaternary/Tertiary faults, undifferentiated**—Faults that dictate regional land surface changes. Faults may act as groundwater conduits to create lines of more vigorous sagebrush growth which make them more apparent in aerial photography than in the field.
- **Scarp profile location and number**



SCARP PROFILES



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