



SURFICIAL MATERIAL GEOLOGIC MAP OF THE MISSION HILL 7.5' QUADRANGLE SOUTH DAKOTA, USA

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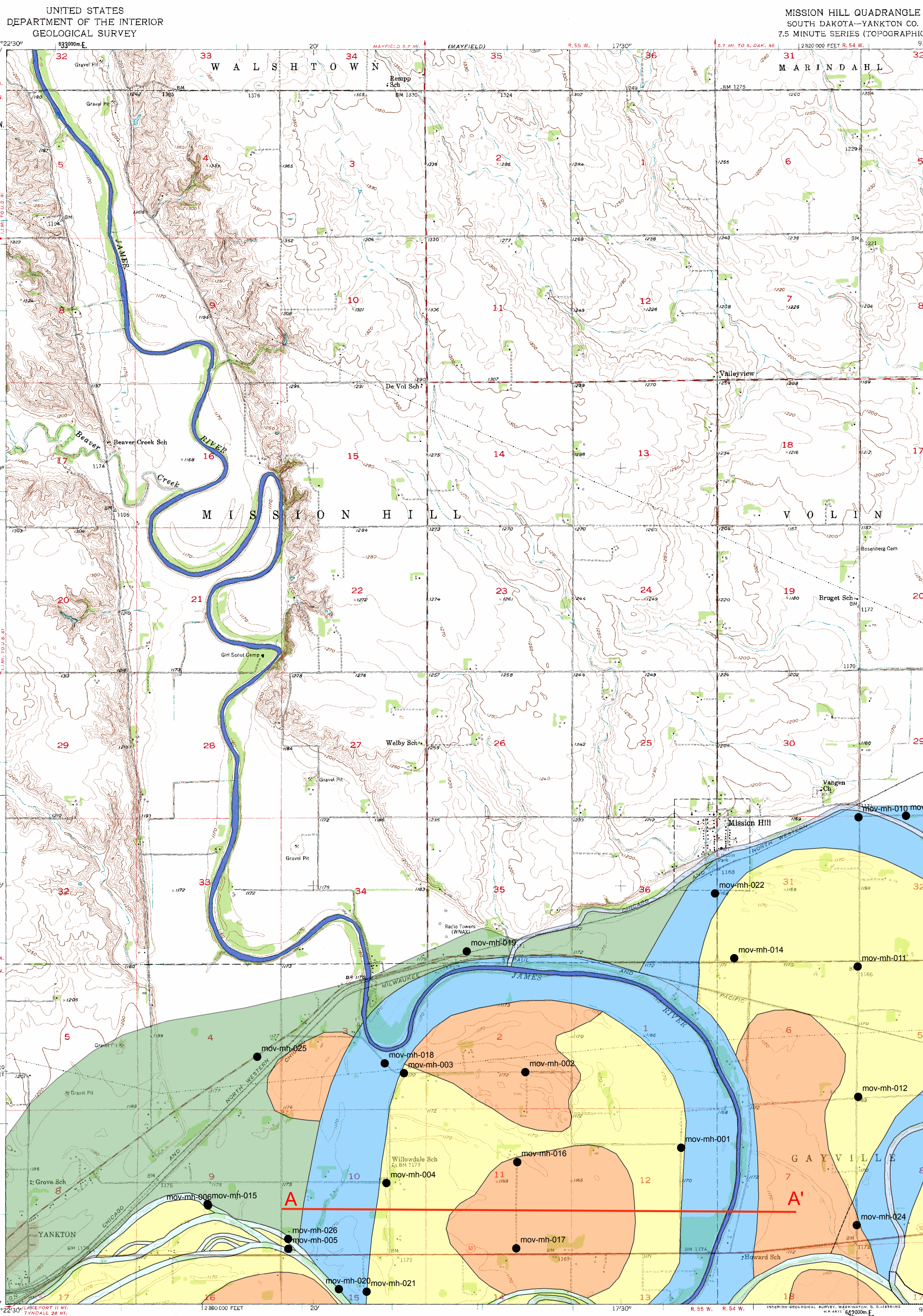
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Misr Modern Missouri and James River

Hchm Abandoned Channel Fill of the Missouri River

Includes channel fills that are comparable in size to full flow channels. Assumed to carry most or all of the contemporary Missouri River discharge at some point in time during history. Channel fills are floored by fine-to-medium sand, but are composed of fine-grained facies in the upper and thickest part. Upper fine-grained fill components comprise mostly "active fill" lithology with thin to thick inter-beds of silt loam, loam, and fine sand with local lenses and layers of clay and fine sand. The fine-grained component is less commonly formed of "passive fill" lithology of clay and silty clay with minor silt loams. The basal channel fill sand is not distinguished well from underlying sand; the upper-fine grained components range in thickness from 4 to over 7m thick, but are more typically 4 to 6m thick.

Hchm(s) Secondary Abandoned Channel Fill of the Missouri River

Channel fills with less than two-thirds of the cross-sectional area of the larger contemporary primary channel fills, but larger than the smaller minor chute channels included below Hpmo. Fills are approximately equal to or larger than 2m thick, and are almost entirely "active fill" lithology with rare "passive fill" lithology.

Hpmo Point Bar Deposits of the Missouri River

Composed of fine-to-medium, well-sorted to loamy sand with local (<30cm) layers of fine-grained lithology. This grades upward into thin (>2cm) finer grained (silt-loam to loam) sections. These are capped by mud veneer layers (<80cm) composed of clay and silty clay. These may also be locally capped by thin (<2cm) chute channel fills composed of "active fill".

Hsno Splay Deposits of the Missouri River

Splay deposits comprise mostly silty loam. They may contain thin beds of clay or sand. Locally, they contain thin to medium-thick lenses and ribbons of loamy- to fine-sand that are interpreted to have been deposited in small splay channels and bars. This unit tends to be less than 3m thick, and it forms a mantling veneer over the other units

Hbno Back swamp (Flood basin) Deposits

Thick, more than six meters, deposits of mostly clay with minor silt loam. Underlying deposits not observed.

Jrbs James River Channel Belt Sands

Jrch James River Channel Fill

CS Cross-Section Line

DH Drill-hole Locations

Jrbc James River Channel Belt Boundary

T Terrace

GC Ghost Channels

Mapped, edited, and published by the Geological Survey as part of the Department of the Interior program for the development of the Missouri River Basin. Control by USGS and USC&GS. Topography from aerial photographs by Kelihi plotters and by planetable surveys 1957. Aerial photographs taken 1954. Polyconic projection, 1927 North American datum 10,000-foot grid based on South Dakota coordinate system, south zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. Red tint indicates area in which only landmark buildings are shown. Dashed land lines indicate approximate locations.

SCALE 1:24,000

ROAD CLASSIFICATION: Heavy-duty, Medium-duty, Light-duty, Unimproved dirt, State Route

CONTOUR INTERVAL, 10 FEET. DOTTED LINES REPRESENT 5-FOOT CONTOURS. DATUM IS MEAN SEA LEVEL.

MISSION HILL, S. DAK. N 4252.5--W 9715.17.5 1997

