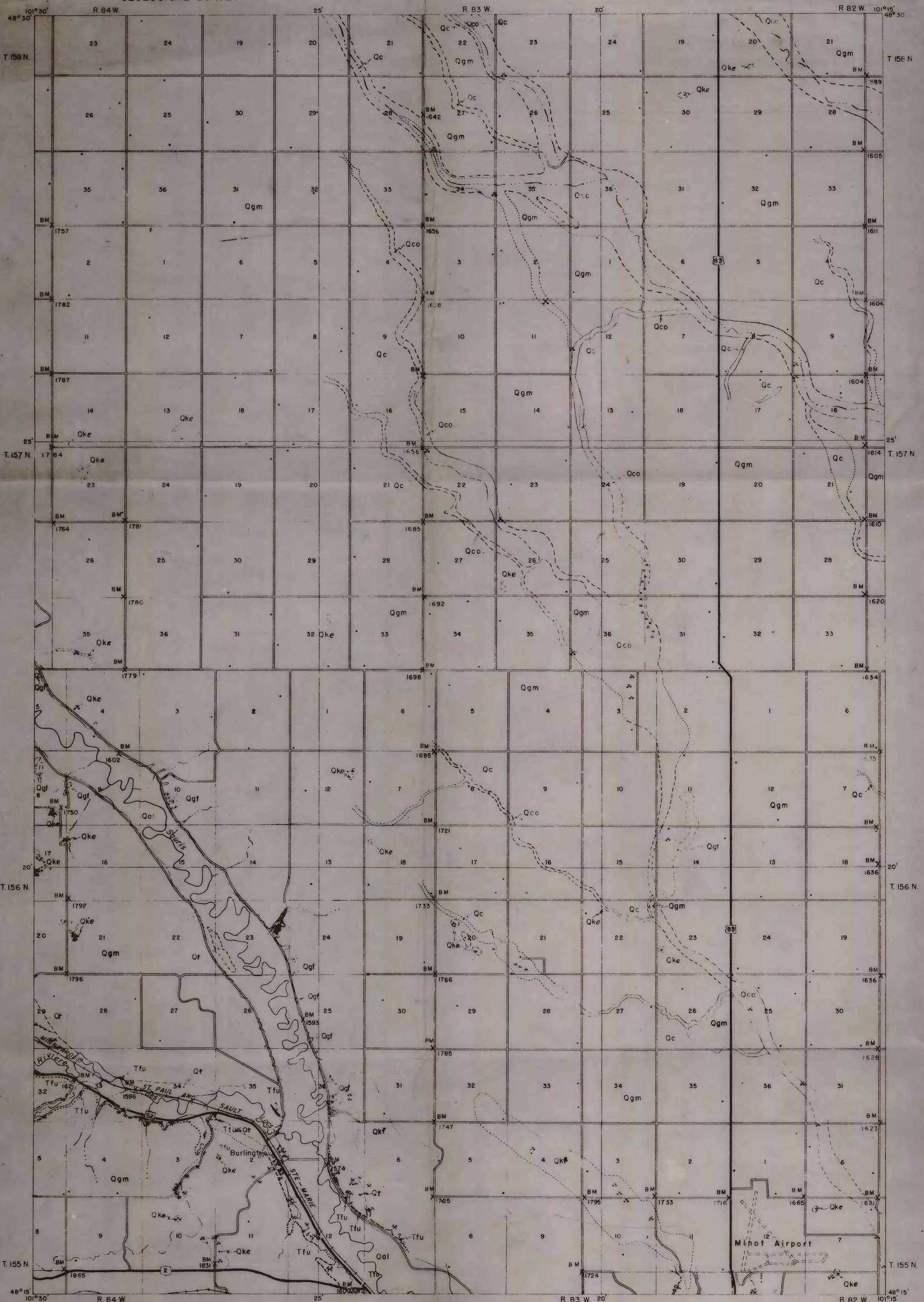
47-10

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared as a part of the Department of Interior program for development of the Missouri River Basin

MISSOURI RIVER BASIN
GEOLOGIC MAPPING AND MINERAL RESOURCE INVESTIGATIONS
MISSOURI-SOURIS, NORTH DAKOTA



PRELIMINARY

GEOLOGIC MAP OF THE BURLINGTON QUADRANGLE, NORTH DAKOTA

Geology mapped by Richard W Lemke, Brea S Jensen, and J Hiram Smith

APPROXIMATE MEAN DECLINATION 1945

SCALE: 1/ 48000

1 1/2 0 1 2 3 MILES

EXPLANATION

QUATERNARY

Recent

Qal

Alluvium

Postglacial sand, silt, and clay constituting the floor of the river valleys and the larger tributaries; also includes larger alluvial and colluvial fans.

Pleistocene
Wisconsin stage
Late Wisconsin

Qco | **Qc**

Outwash channel deposits

Deposits in channels incised by glacial meltwater. (Qco) consists of gravel, sand, and silt generally about 5 feet thick but in a few places more than 10 feet thick. (Qc) consists chiefly of silt and clay ranging in thickness from a few feet to less than a foot; in places includes thin veneer of slope wash and of Recent alluvium deposited by small streams incised in the floors of the channels. (Qco) and (Qc) intergrade.

Qgf

Glaciofluvial deposits, undifferentiated as to origin

Glacial outwash consisting of poorly sorted gravel, sand, and silt constituting part of lower portion of spurs between tributaries along the walls of Souris River valley. Till commonly flanks deposits and in places is incorporated in it. Beds are generally distorted and dip from nearly horizontal up to steep angles.

Qke

Kame and eskers, undifferentiated

Mounds and ridges generally less than 15 feet high consisting of poorly sorted gravel, sand, and silt; minor amounts of till; some boulders on surfaces of deposits.

Qkf

Kame field

Area containing numerous kames. Slightly higher than surrounding ground moraine.

Qt

Outwash terrace deposits

Remnants of glacial outwash fill left as terraces along walls of river valleys. Deposits consist of sand, gravel, and boulders. In a few places deposits are as much as 20 feet thick but generally are thinner. In places underlain at shallow depth by till or bedrock.

Qgm

Ground moraine

Chiefly compact, highly impervious, stony, clay-rich till, locally mantled by sand, silt or clay deposited by glacial meltwater. Also includes small deposits of alluvium and colluvium deposited in numerous kettles and other undrained depressions.

Paleocene

Tfu

Fort Union formation
Tongue River member

Continental beds of poorly to moderately consolidated sandstone, sand, siltstone, shaly clay, and lignite. Weathered exposures are gray to tan. Solid pattern shows individual exposure or area of closely spaced outcrops.

TERTIARY

Contact

Contact, approximate

Contact, gradational or indefinite

Coal bed covered, location approximate

Coal bed covered, location inferred

Marsh or swamp

Intermittent stream

Spring

Inactive lignite mine, tunnel or shaft

Sand and gravel pit

Section line

52 Paved U. S. Highway

Secondary road

Building

BM ×1756'

Bench mark with altitude, location approximate

1623'
⊙<234'

Approximate location of test holes drilled by the U. S. Geological Survey. Top figure gives surface altitude (precise level is shown to hundredths of a foot; aneroid determination shown to nearest foot). Bottom figure is interpreted maximum depth to bedrock. Bedrock in some holes may be considerably closer to the surface than indicated.