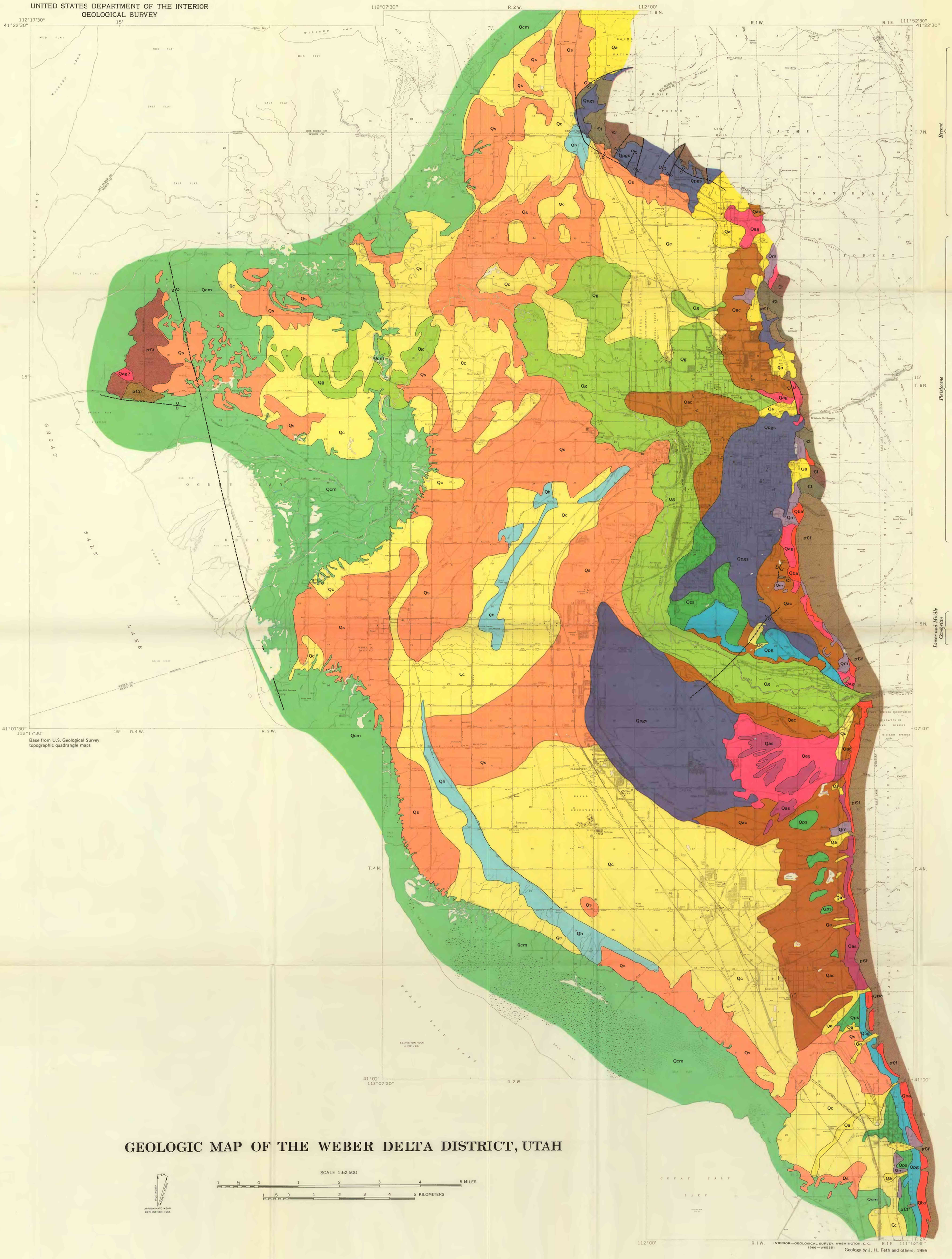

Base from U.S. Geological Survey topographic quadrangle maps

GEOLOGIC MAP OF THE WEBER DELTA DISTRICT, UTAH

SCALE 1:62 500

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1966

EXPLANATION

Qa — **Alluvium**

Mostly gravel of river flood plains, highly permeable; partly mudrock flow deposits in fans near mountains; permeability variable but commonly poor; recharge area in valleys of the Weber and Ogden Rivers; thickness unknown but locally exceeds 200 feet

Qcm — **Clay and mud**

Impermeable, salt-impregnated, fetid; about 20 feet thick (Eardley, 1944); deposited by Great Salt Lake up to an altitude of 4200–4210 feet, approximately the highest historic shoreline

UNCONFORMITY

Qg — **Gravel**

Mostly flood-plain deposits older than alluvium; highly permeable but commonly separated from deeper aquifers by underlying silt and clay; thickness unknown

Qs — **Sand**

Commonly fine, well sorted, permeable; underlies broad areas below an altitude of 4,300 feet; forms ridges west of Ogden; probably 10–20 feet thick

Qc — **Clay**

Permeability very low; forms confining layer over shallow artesian aquifers; salt impregnated; underlies much of area below an altitude of 4,300 feet; at least 35 feet thick

Qh — **Hardpan**

Lime-cemented silt and sand; in arcuate bands in the western part of the area; hard to break but relatively permeable; 1–5 feet thick

Recent

UNCONFORMITY

Qpg, Qpgs, Qps — **Provo Formation**

Qpg, *gravel, clean, well-rounded; composed mostly of quartzite; deposited as shore embankments and as a cap on the benchlands north and south of the Weber River; a few to 20 feet thick; at the land surface in the recharge area of the shallow aquifers near Roy*

Qpgs, *gravel and sand; mixed or in thin alternating beds deposited principally in shore embankments; thickness uncertain, probably 10- (rarely) 50 feet; transmits recharge downward where not sealed by underlying silt and clay*

Qps, *sand; mostly remnants capping terraces near an altitude of 4,800 feet; commonly 10–20 feet thick, locally 50–100 feet thick; at the surface in part of the recharge area for the shallow aquifers near Roy; very silty in areas where it is thickest*

UNCONFORMITY

Qba — **Bonneville(?) and Alpine Formations undifferentiated**

Gravel and sand in narrow strips against bedrock on shore terraces above an altitude of 5,100 feet; a few to 50 (?) feet thick; receives and transmits recharge but covers only a small area; Bonneville (?) Formation not recognized separately

Qag, Qas, Qac — **Alpine Formation**

Qag, *gravel, well-rounded; composed mostly of quartzite; formed as shore embankments at many altitudes up to 5,100 feet; thickness not determined, but apparently less than 25 feet; receives recharge and transmits it downward*

Qas, *sand, commonly coarse and angular, locally fine and well-rounded; deposited mostly as shore deposits in close association with gravel facies; locally more than 100 feet thick; receives recharge*

Qac, *clay, silt, and fine sand in thin beds; clay commonly dominant; 200 feet thick in wells, slabby cliff-forming unit is 80 feet thick; covers wide areas near mountains and across lowlands down to an altitude of 4,300 feet; confining layer for shallow aquifers*

Lake Bonneville Group

UNCONFORMITY

Qm — **Mudflow deposits**

Material ranges in size from boulders to clay; locally includes fanglomerate and talus; thickness not known; mostly impermeable; common in the area north of Pleasant View where younger deposits may be included; considered pre-Alpine in age in most places

Pleistocene

QUATERNARY

UNCONFORMITY

Cl — **Limestone**

Pure to very silty limestone containing interbedded shale and dolomite; cavernous where jointed and readily adsorbs snowmelt and precipitation; includes Middle and Lower Cambrian Ophir Shale

Ct — **Tintic Quartzite**

Massive quartzite; locally crossbedded, locally pebbly; absorbs snowmelt and precipitation where faulted and jointed

Lower and Middle Cambrian

CAMBRIAN

LOCAL DISCONFORMITY

pCt — **Tillite**

Dense metamorphosed tillite; not known to be water bearing in the Weber Delta district

pCp — **Phyllite**

Low-grade silver-gray phyllite; contains abundant pseudomorphs of limonite after pyrite; includes one or more metamorphosed extrusive deposit; not known to be water bearing in the district

ANGULAR UNCONFORMITY

pCf — **Farmington Canyon Complex of Eardley (1944)**

Gneiss and schist; exposed along much of the base of the Wasatch Range; where jointed and faulted absorbs recharge and yields water to springs; probably subsurface source of recharge to artesian aquifers

PRECAMBRIAN

Contact

Dashed where inferred; most contacts away from foothill zone are gradational

Fault

Dashed where inferred; dotted where concealed. U, upthrown side; D, downthrown side

The geologic mapping was completed before the topographic base became available; consequently, the geologic boundaries may not correspond in detail with topographic features

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.
1966—W65351

Geology by J. H. Feth and others, 1956