STATE BUREAU OF MINES AND MINERAL RESOURCES
A. J. THOMPSON, DIRECTOR

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY
E. J. WORKMAN, PRESIDENT

BULLETIN 63 PLATE Ib
UNION COUNTY
NORTHWEST QUARTER

EXPLANATION

QUATERNARY

Qal — Alluvium
Silt, sand, and gravel along present drainage; locally includes slope wash

Ql — Landslide
Contacts omitted

Qbal — Basalt-derived alluvium
Cinders and fine to coarse basaltic alluvium derived from nearby volcanic centers; may rest on lava flows

Cover
Covered bedrock, mapped locally; includes alluvium along narrow valleys; contacts omitted

Qb (bc, ph, tm, cm) — Capulin basalt (of Collins)
bc- *Baby Capulin Mountain*; ph- *Purvine Hills*; tm- *Twin Mountain*; cm- *Capulin Mountain*; Qb-*undifferentiated*

Qt — Terrace deposits
Mapped locally

QTb (jb, rm, bm, mh, av, bh, ep, dh, gm, pm, QTb_{sg}, QTb_3, QTb_2) — Clayton basalt (of Collins)
Sequence of flows: jb-*Jose Butte*; rm^c-*Robinson Mountain*; bm^c-*Bellisle Mountain*; mh-*Mud Hill*; av-*augite vents*; bh-*Big Hill, East Big Hill*; ep-*Emery Peak, East Emery Peak* c-vent in Colfax County
Flows with unknown position in sequence: dh-*Dunches Hill*; gm-*Gaylord Mountain*; pm-*Purvine Mesa*; QTb_{sg}-*Sierra Grande*; QTb-*undifferentiated; may include* Qb^2 *of Lee and Mertie*; $QTb_{2,3}$-*local subdivisions*

TERTIARY

Tb — Raton basalt (of Collins)
May include only Qb^1 *of Lee and Mertie*

Tu (–g) — Upland deposits, undifferentiated
Mostly Ogallala formation; tan sandy clay, silt, sand, and gravel; 0 to 200 ft; gravel (g) indicated locally; may include bedrock covered by slope wash

ANGULAR UNCONFORMITY

CRETACEOUS

Knc — Niobrara and Carlile formations
Niobrara formation-Fort Hays limestone member, 40 to 50 ft Carlile shale-dark-gray; limestone near top; 200 ft

Kg — Greenhorn and Graneros formations
Greenhorn limestone- recognized only in northwestern part Graneros shale - dark-gray; two thin limestone beds 20 ft and 50 ft above base; 125 ft

Kd — Dakota formation
Lenticular shaly sandstone, shale, and sandstone; basal member is cliff-forming sandstone; 150 ft

JURASSIC

KJ — Purgatoire and Morrison formations
Purgatoire formation - upper dark-gray shale and lower sandstone members; 50 to 100 ft
Morrison formation - green to maroon mudstone, with thin siltstone, sandstone, and limestone beds; thick sandstone near top locally; brown-silt member (25 to 70 ft) at base; agate bed 10 ft above brown-silt member; 350 ft

Je — Exeter (Entrada) sandstone
Fine-grained massive sandstone; 0 to 50 ft. Dotted line indicates inferred position beneath landslides

ANGULAR UNCONFORMITY

TRIASSIC

Rt — Travesser formation*
Red-brown silty to sandy mudstone, light-colored fine-grained sandstone, and brown silt-pebble conglomerate; 300 ft

Rbh — Baldy Hill formation*
Purple, olive, and gray mudstone and sandstone, chalcedony nodules near the top, 50+ ft
* *Newly named*

Geologic contact
Dashed where approximately located; dotted where inferred (concealed or not visited)

High-angle fault
Dashed where approximately located; dot on downthrown side

Volcanic centers
Cone remnants, with floot of cinders

Streams — *Permanent* *Intermittent* *Ephemeral*

Spring or seep — Ephemeral lake

Wells — *High-yield* *Low-yield*
Letter "L" by circle indicates well log in text

Oil test — Carbon dioxide well

Roads — *Paved* *Unpaved*; Trails — *Pickup* *Jeep*

△GRANDE Triangulation station — X M6006 Bench mark
Showing name or initial letter of designation, and elevation in feet above mean sea level

Base from U. S. Soil Conservation Service semicontrolled photomosaics of 7½-minute quadrangles. Land grid approximated from fence lines and roads on photomosaics

GEOLOGY OF NORTHWESTERN UNION COUNTY, NEW MEXICO

Scale 1/125,000
0 1 2 3 4 Miles

NEW MEXICO

Geology by Brewster Baldwin, W. R. Muehlberger and B. B. Cooley; culture by Baldwin, Muehlberger, Cooley, and F. X. Bushman; mapped 1954–1956; cartography by H. H. Hawk and W. E. Arnold