Base from U.S. Geological Survey 1:250,000
Grand Junction, 1956–62; Moab, 1956–62;
and Montrose, 1956–62

APPROXIMATE MEAN DECLINATION, 1969

SCALE 1:96 000

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

COLORADO
QUADRANGLE LOCATION

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.
1969—G68233

Geology by W. E. Yeend, 1966

EXPLANATION

Recent — Time of development of late Recent soil

Glacial facies

Alluvial facies

- Qal — Low-terrace and flood-plain deposits
- Qass — Alluvial, eolian, and lake sand, silt, and clay

Colluvial facies

- Qs — Active (?) earthflow, slump, and landslide deposits
- Qes — Earthflow and soil creep
- Qm — Mudflow
- Qft — Frost rubble, talus, and rock glaciers (?)

Pleistocene

Pinedale (?) Glaciation — Grand Mesa Formation

- Qgtu, Qgtl — Till. Qgtu, *upper till member*; Qgtl, *lower till member. In places may include upper till member where till resembles lower till member*

TIME OF DEVELOPMENT OF POST-GRAND MESA SOIL

- Qga, Qgay, Qgam, Qgao — Terrace gravel. Qgay, *younger gravel*; Qgam, *middle gravel*; Qgao, *older gravel*
- Qgp, Qgpo — Pediment gravel. Qgpo, *older gravel*
- Qgmf — Mudflow and fan gravel

Bull Lake (?) Glaciation — Lands End Formation

- Qlt — Till

TIME OF DEVELOPMENT OF LANDS END-GRAND MESA INTERGLACIAL SOIL

- Qla — Terrace and fan gravel

Pre-Bull Lake (?) glaciations

- Qt — Till

TIME OF DEVELOPMENT OF PRE-LANDS END INTERGLACIAL SOIL

- Qa, Qay, Qam, Qao — Terrace and fan gravel. Qay, *younger gravel*; Qam, *middle gravel*; Qao, *older gravel*
- Qp, Qpo — Pediment gravel. Qpo, *older gravel*
- Qsl — Slump blocks, talus, and solifluction deposits
- Qcy, Qco — Colluvium. Qcy, *younger colluvium*; Qco, *older colluvium*

QUATERNARY

- Moraines
- Areas of ice stagnation in till of the Grand Mesa Formation (Qgtl)
- Areas of quartz-rich cobbles and pebbles on Grand Mesa
- Outcrops of bedrock and thin colluvium
- Contact — *Dashed where approximately located*
- Mudflow
- Grooves and striations on basalt — *Arrows indicate direction of movement*
- 2 — Measured-section locality

GEOLOGIC MAP OF SURFICIAL DEPOSITS IN THE GRAND AND BATTLEMENT MESAS AREA, DELTA, MESA AND GARFIELD COUNTIES, COLORADO