145°00'
62°45'

144°30'
62°45'

ENGINEERING GEOLOGY

This map was based primarily upon original photo-interpretation of color infrared aerial photography and LANDSAT imagery. Published and unpublished geologic maps and reports were used as supplementary sources of information. Minimum mapping resolution is usually 40 acres; important features that could be located with accuracy on the topographic basemaps were mapped to a minimum of 10 acres.

Terrain units consist of landform types and their constituent geologic materials occurring from the ground surface to a depth of 25 feet. A simple terrain unit consists of a single landform type; layered, mosaic, and complex terrain units consist of 2 or more landform types. The terrain unit classification is based on the hierarchical catalog of landform types developed for Alaska by Brown and Lau (1980) and Kreig and Reger (1976, 1980). Landform types are identified by letter codes; uppercase letters indicate the origin of the deposit while lower case letters indicate the specific landform type within a group. See the User's Guide to the Copper River Area Resource Mapping Project for detailed descriptions of mapped units and documentation of mapping methods and sources.

UNCONSOLIDATED (SEDIMENTS) TERRAIN UNITS

C Colluvial (gravity) Deposits
Ca Avalanche Deposits
Cg Rock Glacier
Cl Landslide Deposits
Ct Talus Deposits

El Loess (wind deposited silt)
Es Sand Dune

Fd Fluvial (stream) Delta Deposits
Fda Abandoned Fluvial (stream) Delta Deposits
Ff Alluvial (stream) Fan Deposits
Ffg Granular Alluvial (stream) Fan Deposits
Ffs Silt Alluvial (stream) Fan Deposits
Fm Mud Volcano
Fp Floodplain (stream) Deposits
Fpb Braided Floodplain (stream) Deposits
Fpm Meander Floodplain (stream) Deposits
Fpa Abandoned Floodplain (stream) Deposits
Fs Retransposted (slopewash) Deposits
Ft Fluvial (stream) Terrace Deposits
Fto Old Fluvial (stream) Terrace Deposits

Gg Glacier (ice)
Gl Glacial Lacustrine (glacial lake) Deposits
Gm Glacial Moraine (hilly) Deposits
Gt Glacial Till (nearly level) Deposits
Gtd Glacial Drumlin Till Deposits
Gtf Glacial Fluted Till Deposits
Gto Older Glacial Till Deposits
Gty Younger Glacial Till Deposits
GF Glaciofluvial (meltwater) Deposits, Undifferentiated
GFe Glaciofluvial (meltwater) Esker Deposits
GFk Glaciofluvial (meltwater) Kame Deposits
GFl Lowland Glaciofluvial (meltwater) Deposits
GFo Glaciofluvial (meltwater) Outwash Deposits

L Lacustrine (lake) Deposits
Lb Lacustrine (lake) Beach Deposits
Lt Lacustrine Thaw Basin/Lake Deposits

Mb Marine Beach Deposits
Mt Marine Tidal (mud flat) Deposits

O Organic Deposits

Wb Water Body: Bay
Wf Water Body: Fjord
Wg Water Body: Lagoon
Wl Water Body: Lake
Wt Water Body: Strait

CONSOLIDATED (BEDROCK) TERRAIN UNITS

Ib Extrusive Igneous Bedrock (lava flows)
Iba Extrusive Acidic Bedrock (lava flows)
Ibb Extrusive Basic Bedrock (lava flows)
Ig Intrusive Igneous Bedrock
Iga Intrusive Acidic Bedrock (granitic rocks)
Igb Intrusive Basic Bedrock (gabbroic rocks)
Igu Intrusive Ultrabasic Bedrock
Ip Pyroclastic Deposits (ash, cinder)

Nl Slate, Phyllite
Nm Marble
Np Serpentinite
Nq Quartzite
Ns Schist

S Sedimentary Bedrock, Undifferentiated
Sc Conglomerate
Sh Shale, Siltstone
Sl Limestone
Ss Sandstone

CONNECTIVES

— Layered terrain unit; one landform type overlying another.

+ Mosaic terrain unit; dominant component listed first. A mosaic terrain unit is composed of 2 discrete components, each of which comprises greater than 25% of the area of the polygon and which are too small and intricately mixed to separate.

EXAMPLES

Layered terrain unit:

Organic Deposits overlying Glacial Till Deposits
O / Gt

Mosaic terrain unit, dominant component listed first:

Floodplain Deposits and Fluvial Terrace Deposits
Fp + Ft

Complex terrain units:

Slate Bedrock and Colluvial Deposits overlying Slate Bedrock
Nl + C / Nl

A mosaic of Glacial Till and Colluvial Deposits
Gt + C

overlying Slate Bedrock — Nl

62°30'
144°30'

This document is intended only for general land management and planning purposes. There has been no field verification of the interpretation other than recourse to published and unpublished maps and reports. Projects which require site-specific data will require additional on-site investigation to verify terrain units, their characteristics, and their geotechnical properties.

PREPARED FOR THE

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

BY AGRA

ARCTIC GEO RESOURCE ASSOCIATES

PHOTO-INTERPRETED BY

ARCTIC GEO-TERRAIN CONSULTING

1984

STATE OF ALASKA — Jim McCalin Brown — AA-10 — REGISTERED PROFESSIONAL GEOLOGIST

SCALE 1:63,360

1 0 1 2 3 4 MILES

1 0 1 2 3 4 5 KILOMETERS

GULKANA (C-2) QUADRANGLE

ENGINEERING GEOLOGY

This document has not received official DGGS review and publication status, and should not be quoted as such.