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## QUATERNARY SEDIMENTS AND ROCKS (HOLOCENE AND PLEISTOCENE)

### Sediments and sedimentary rocks

- Qal — Alluvium, undifferentiated
- Qya — Younger alluvium
- Qs — Sand dunes
- Qpl — Playa, lake bed, and flood plain deposits
- Qg — Glacial moraines

### Volcanic rocks

- Qb — Basalt flows

## QUATERNARY AND PLIOCENE SEDIMENTS AND ROCKS

### Sediments and sedimentary rocks

- QThs — Hot spring travertine, sinter, and tufa (Holocene to Pliocene)
- QTls — Landslide deposits, colluvium, and talus (Holocene to Pliocene)
- QTg — Older gravels (Pleistocene and Pliocene)
- QToa — Older alluvium and alluvial fan deposits (Pleistocene and Pliocene)
- QTs — Tuffaceous limestone, siltstone, sandstone, and conglomerate (Holocene to Pliocene)

### Volcanic rocks

- QTb — Basalt flows (Holocene to Pliocene)
- QTa — Andesite flows and breccias (Holocene to Pliocene)
- QTr — Rhyolite dome (Holocene to Pliocene)

## TERTIARY AND UPPER CRETACEOUS(?) ROCKS

### Volcanic and sedimentary rocks

- Tba — Andesite and basalt flows (Miocene and Oligocene)
- Tbg — Basalt, gravel, and tuffaceous sedimentary rocks (Miocene)
- Ths — Tuffaceous sedimentary rocks (middle Miocene to upper Oligocene)
- Ts3 — Younger tuffaceous sedimentary rocks (Pliocene and Miocene)
- Tb3 — Basalt (Miocene)
- Ta3 — Younger andesite and intermediate flows and breccias (Miocene)
- Tt3 — Younger silicic ash flow tuffs (Miocene)
- Tr3 — Younger rhyolitic flows and shallow intrusive rocks (Miocene)
- Ts2 — Older tuffaceous sedimentary rocks (lower Miocene and Oligocene)
- Tb2 — Basalt, tuff, and breccia (lower Miocene and Oligocene)
- Ta2 — Intermediate andesite and intermediate flows and breccias (lower Miocene and Oligocene)
- Tt2 — Intermediate silicic ash flow tuff (lower Miocene and Oligocene)
- Tr2 — Intermediate rhyolitic flows and shallow intrusive rocks (lower Miocene and Oligocene)
- TKs1 — Conglomerate, lacustrine, and tuffaceous sedimentary rocks (lower Oligocene to Upper Cretaceous(?))
- Ta1 — Older andesite and intermediate flows and breccias (lower Oligocene to middle Eocene)
- Tt1 — Older silicic ash flow tuffs (lower Oligocene to middle Eocene)
- Tr1 — Older rhyolitic flows and shallow intrusive rocks (lower Oligocene to middle Eocene)

### Intrusive rocks

- Tmi — Mafic phaneritic intrusive rocks (Miocene to middle Eocene)
- Tfi — Felsic phaneritic intrusive rocks (Miocene to Eocene)
- Thi — Rhyolitic intrusive rocks with aphanitic groundmass (Miocene to middle Eocene)

## MIOCENE(?) TO JURASSIC(?) INTRUSIVE ROCKS

- TJmi — Mafic phaneritic intrusive rocks (Miocene(?) to Jurassic(?))
- TJfi — Felsic phaneritic intrusive rocks (Miocene(?) to Jurassic (?))

## MESOZOIC INTRUSIVE AND VOLCANIC ROCKS

### Intrusive rocks

- Kmi — Mafic phaneritic intrusive rocks (Cretaceous)
- Kfi — Felsic phaneritic intrusive rocks (Cretaceous)
- Ki — Dikes (Cretaceous)
- TJgi — Gabbro complex, anorthosite, and albitite (Early Cretaceous to Middle Jurassic)
- Jmi — Older mafic phaneritic intrusive rocks (Jurassic)
- Jfi — Older felsic phaneritic intrusive rocks (Jurassic)
- Ji — Phaneritic intrusive rocks (Jurassic)
- ℾfi — Felsic phaneritic intrusive rocks (Triassic)

### Volcanic rocks

- Jvb — Flows, basaltic tuffs, and lapilli tuffs (Middle(?) Jurassic)
- Jvr — Rhyolite flows, tuffs, and volcaniclastic rocks (Upper Jurassic)
- Jℾv — Metavolcanic rocks (Jurassic(?) and Triassic(?))
- ℾJvb — Mafic flows and volcanic breccias (lower Upper Triassic to lower Middle Triassic)
- ℾkv — Andesite, rhyolite, tuff, and volcaniclastic rocks (Middle and Lower Triassic)

## MESOZOIC TERRANES, SEDIMENTARY ROCKS, AND ASSEMBLAGES

### Terranes

#### Walker Lake Terrane

- WPN — Pine Nut assemblage—Volcanogenic, carbonate, and clastic rocks (Middle(?) Jurassic to Middle Triassic)
- WPL — Pamlico–Lodi assemblage—Carbonate and volcanogenic rocks (Middle(?) Jurassic to Middle Triassic)
- WLB — Luning–Berlin assemblage—Carbonate and terrigenous clastic rocks (Middle(?) Jurassic to Middle Triassic)

#### Black Rock–Jackson Terrane

- BRJ — Basinal, island arc, carbonate, and volcanogenic rocks (Middle Jurassic to Mississippian)

#### Sand Springs Terrane

- SAS — Basinal volcanogenic rocks and carbonate turbidites (Lower Jurassic and Upper Triassic)

#### Quartz Mountain Terrane

- QM — Orthoquartzite, feldspathic sandstone, and volcanic rocks (Mesozoic or Paleozoic, possibly Jurassic)

#### Jungo Terrane

- JO — Turbiditic, fine-grained terrigenous clastic rocks (Middle Jurassic to Upper Triassic)

## MESOZOIC TERRANES, SEDIMENTARY ROCKS, AND ASSEMBLAGES

### Sedimentary rocks and assemblages

#### Localized Clastic Rocks

- TKcg — Conglomerate and clastic rocks (Tertiary(?) and Cretaceous(?))
- Kcg — Siltstone, shale, conglomerate, and limestone (Cretaceous)
- Jcg — Conglomerate, limestone, and quartz sandstone (Middle and Lower Jurassic)

#### Gold Range Assemblage

- Jℾgcr — Terrigenous clastic and volcanogenic rocks (Lower Jurassic and Upper Triassic)

#### Humboldt Assemblage

- Jℾs — Shale, siltstone, sandstone, and minor carbonate (Lower Jurassic to Upper Triassic)
- ℾc — Limestone, dolomite, shale, sandstone, and conglomerate (middle Upper to upper Lower Triassic (Carnian to Spathian))

#### Siliciclastic Overlap Assemblage

- ℾel — Shale, sandstone, and limestone (Lower Triassic)

#### Cratonal Sequence

- Jas — Eolian crossbedded sandstone (Jurassic)
- Jℾch — Continentally derived siltstone and clay (Lower Jurassic and Upper Triassic)
- ℾmi — Marine siltstone, limestone, and conglomerate (Middle(?) and Lower Triassic)

## PALEOZOIC ROCKS

### Sedimentary and metamorphic rocks

#### Carbonate Shelf Sequence

- Pc — Cherty limestone, dolomite, shale, and sandstone (Middle to Lower Permian)
- Psc — Siltstone, sandstone, limestone, and dolomite (Lower Permian, Leonardian and Wolfcampian)
- PPc — Limestone, dolomite, siltstone, sandstone, and shale (Lower Permian and Pennsylvanian)
- IPMbc — Bioclastic limestone (Pennsylvanian and Upper Mississippian)
- Mc — Limestone (Mississippian)
- Dc — Limestone and minor dolomite (Upper and Middle Devonian)
- Dcd — Dolomite, sandstone, and limestone (Middle and Lower Devonian)
- DSc — Dolomite (Lower Devonian and Silurian)
- SOc — Dolomite, limestone, and shale (Lower Silurian to Middle Ordovician)
- Ocq — Quartzite (Middle Ordovician)
- O€c — Limestone, dolomite, and quartzite (Middle Ordovician to Upper Cambrian)
- €c — Dolomite, limestone, and shale (Cambrian)

#### Undivided and Metamorphosed Carbonate Shelf Sequence Rocks

- D€c — Dolomite and limestone (Middle Devonian to Upper Cambrian)
- DOcm — Dolomite and graphitic marble (Devonian to Upper Ordovician)
- Ocqm — Metaquartzite (Middle Ordovician)
- O€cm — Calcite marble (Middle Ordovician to Cambrian)

## PALEOZOIC ROCKS

### Terranes and assemblages

#### Golconda Terrane

- GC — Basinal, volcanogenic, terrigenous clastic, and minor carbonate rocks (Permian to Upper Devonian)
- GChr — Home Ranch subterrane—Limestone, basalt, chert, and volcaniclastic rocks (Mississippian)

#### Siliciclastic Overlap Assemblage

- P€acl — Sandstone, siltstone, limestone, conglomerate, and carbonaceous limestone (Permian)
- PP€acl — Conglomerate, sandstone, siltstone, and limestone (Permian to Middle Pennsylvanian)

#### Foreland Basin Assemblage

- IPMcl — Shale, siltstone, sandstone, and conglomerate (Middle Pennsylvanian to Lower Mississippian)
- MDcl — Siltstone, limestone, shale, and sandstone (Lower Mississippian and Upper Devonian)

#### Dutch Flat Terrane

- DF — Feldspathic sandstone, shale, and turbiditic limestone (Upper Devonian)

#### Slope Assemblage

- MDst — Shale, graywacke, siltstone, chert, conglomerate, and limestone (Lower Mississippian and Devonian)
- DSt — Platy limestone, dolomite, and chert (Lower Devonian to Silurian)
- DOts — Calcareous shale, siltstone, chert, quartzite, and greenstone (Devonian to Ordovician)

#### Basin Assemblage

- DCs — Shale, chert, quartzite, greenstone, and limestone (Devonian to Upper Cambrian)
- Ss — Feldspathic sandstone, siltstone, shale, and chert (Silurian)

#### Nolan Belt

- O€td — Shale, chert, phyllite, quartzite, and limestone (Ordovician to Cambrian)
- €td — Phyllite, schist, shale, thin-bedded limestone, chert, and siltstone (Cambrian)

## PRECAMBRIAN AND OTHER ROCKS

### Lower Cambrian to Latest Proterozoic clastic rocks

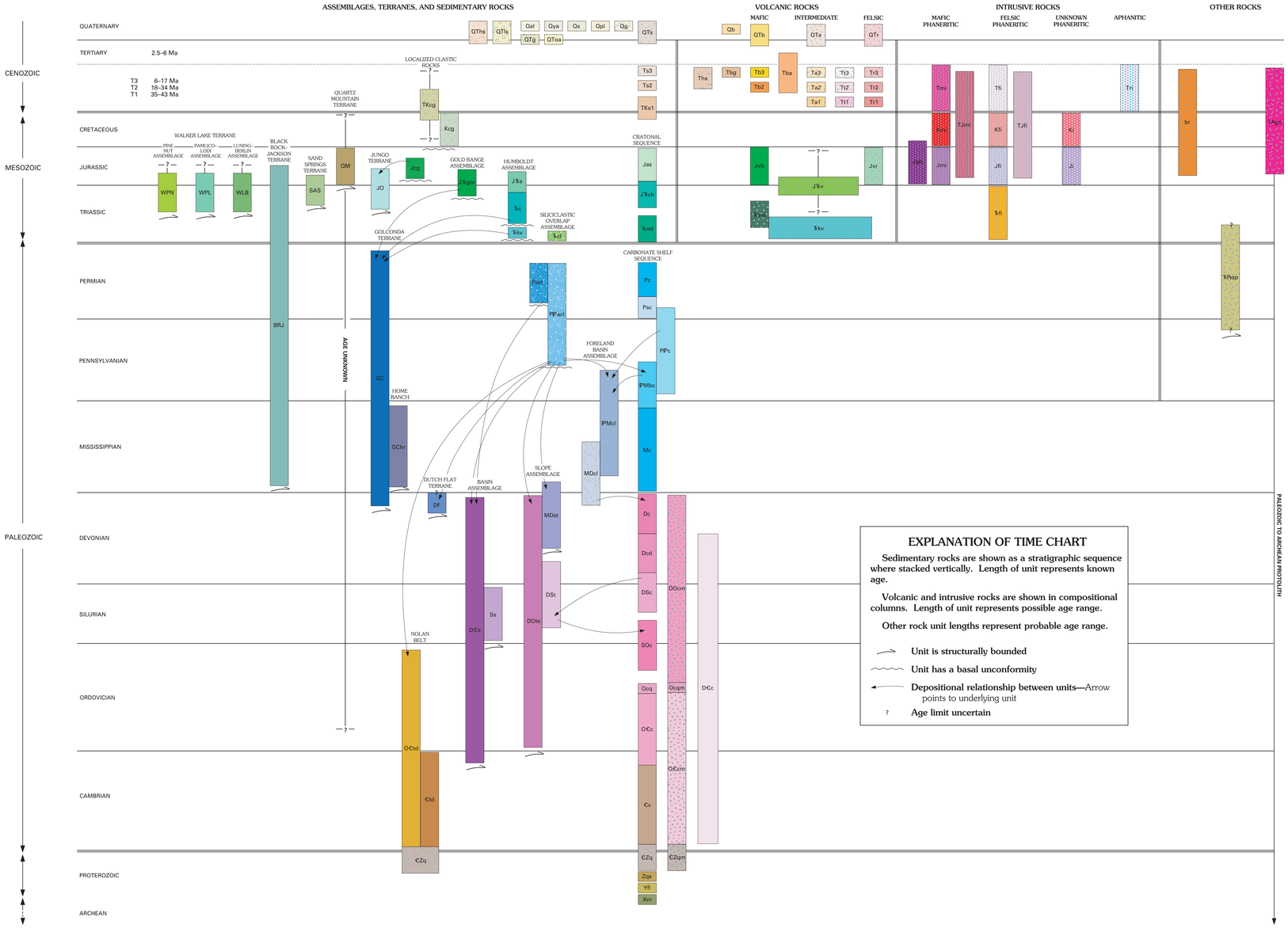
- €Zq — Crossbedded quartzite, siltstone, and phyllite (Lower Cambrian and latest Proterozoic)
- €Zqm — Metaquartzite (Lower Cambrian and latest Proterozoic)
- Zqs — Quartzite, siltstone, conglomerate, limestone, and dolomite (Late Proterozoic)

### Proterozoic basement rocks

- Yfi — Felsic phaneritic intrusive rocks (Middle Proterozoic)
- Xm — Gneiss and schist (Early Proterozoic)

### Other rocks

- br — Mixed breccias including volcanic, thrust, jasperoid, and landslide megabreccia (Tertiary to Jurassic)
- TAgn — Metamorphic-igneous complex (Oligocene, Cretaceous, and Jurassic with Paleozoic, Proterozoic, and Archean protolith)
- ℾPsp — Ultramafic rocks and serpentine (Triassic or upper Paleozoic)




# EXPLANATION FOR GEOLOGIC MAP OF NEVADA

By
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