

PETROLOGY SPECIMEN KEY
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- B-1. Quartz Diorite
- B-2. Porphyritic Granite
- B-3. Quartz Syenite
- B-4. Syenite
- B-5. Basalt
- B-6. Porphyritic Quartz Syenite
- B-7. Monzodiorite
- B-8. Diabase
- B-9. Diorite (with mafic xenoliths)
- B-10. Granite
- B-11. Vent Agglomerate Dike
- B-12. Granite
- B-13. Syenite
- B-14. Volcanic Breccia
- B-15. Vent Agglomerate
- B-16. Hornblende Syenite
- B-17. Quartz Syenite
- B-18. Gabbro
- B-19. Volcanic rock
- B-20. Hornblende Nepheline Syenite
- B-21. Hornblende Syenite
- B-24. Syenite
- B-27. Hornblende Diorite

- BC-1. Granite
- BC-2. Sodalite Nepheline Syenite
- BC-3. Sodalite Hornblende Alkali Feldspar Syenite
- BC-4. Nepheline Syenite
- BC-5. Calcite
- BC-6. Carbonatite
- BC-7. Syenite
- BC-8. Carbonatite with Biotite
- BC-9. Shonkinite
- BC-10. Granite
- BC-11. Shonkinite
- BC-12. Garnet Shonkinite
- BC-13. Syenite
- BC-14. Sodalite Hornblende Nepheline Syenite
- BC-15. Banded Syenite

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DA Series Label Scheme

Felsic Volcanics	1100-1199
Felsic Intrusives	1200-1299
Intermediate Volcanics	1300-1399
Intermediate Intrusive	1400-1499
Mafic Volcanics	1500-1599
Mafic/ultramafic Intrusive	1600-1699
Foliated Metamorphic	2100-2199
Non-foliated Metamorphic	2200-2299
Clastic Sedimentary Rocks	3000-3500
Chemical/Biochemical Sedimentary Rocks	3600-4000

(Felsic extrusive rocks)

- DA-1101. Obsidian
- DA-1102. Porphyritic Plagioclase Rhyolite
- DA-1103. Lithic Welded Tuff
- DA-1104. Welded Tuff
- DA-1105. Welded Tuff
- DA-1106. Perlite
- DA-1107. Welded Tuff (Rhyolite) with pumice fragments
- DA-1108. Volcanic Breccia (Crede, Mineral Co., CO; Miocene- Alboroto Gp.)
- DA-1109. Vitrophyre
- DA-1110. Sanadine Trachyte Porphyry
- DA-1111. Porphyritic Rhyolite (Hondo Canyon, Taos Ski Valley, New Mexico; Tertiary)
- DA-1112. Rhyolite Porphyry (Sangre De Cristo Range, Taos Ski Valley, New Mexico; Tertiary)
- DA-1113. Pumice (Bandelier National Monument, New Mexico; Quaternary)
- DA-1114. Obsidian (Bandelier National Monument, New Mexico; Quaternary)
- DA-1115. Welded Tuff (Questa, New Mexico; Quaternary)
- DA-1116. Tuff (Los Alamos, New Mexico; Tertiary)
- DA-1117. Porphyritic K-feldspar Rhyolite
- DA-1118. Rhyolite Porphyry
- DA-1119. Blue Quartz K-feldspar Rhyolite Porphyry (“Llanite”, Llano, Texas, 800Ma.)
- DA-1120. Welded tuff with pumice fragments (Los Alamos, NM, Quaternary)
- DA-1121. Rhyolite porphyry (Johnson Shut-Ins State Park, MO; Precambrian Grenville basement)
- DA-1122. Rhyolite (Los Alamos, NM)
- DA-1123. Biotite K-feld. Rhyolite Porphyry
- DA-1124. Rhyolite Porphyry
- DA-1125. Welded Tuff (Tierra Azul), Taos NM [Q-T]
- DA-1126. Rhyolite Porphyry w/ angular lithic clasts

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(Felsic intrusive rocks)

- DA-1201. Biotite Granite
- DA-1202. Hornblende Pegmatite
- DA-1203. Town Mt. Granite, Marble Falls TX, [Meso-Proterozoic 1.03 Ga]
- DA-1204. Tourmaline Pegmatite
- DA-1205. Pegmatite (Graphic Granite)
- DA-1206. Biotite Granite
- DA-1207. Granite
- DA-1208. Hornblende Granite
- DA-1209. Orbicular Granite
- DA-1210. Biotite Hornblende Granite
- DA-1211. Quartz Alkali Feldspar Syenite (Town Mt. Granite, Llano Co. TX; Precambrian [1.0 GA])
- DA-1212. Quartz Muscovite Trondhjemite (Alex City, AL; Devonian [366 MA])
- DA-1213. Biotite Granite
- DA-1214. Pink med.-gr. Bi. Granite (Town Mt. Granite, Llano, Texas; Precambrian [1.0 GA])
- DA-1215. Biotite Pegmatite
- DA-1216. Pegmatite
- DA-1217. Spodumene Pegmatite (Harding Pegmatite Mine, Copper Hill, New Mexico; Precambrian)
- DA-1218. Lepidolite Apatite Spodumene Pegmatite (Harding Pegmatite Mine, Dixon, New Mexico, Proterozoic)
- DA-1219. Lepidolite pegmatite (Harding pegmatite, Dixon, NM, Proterozoic)
- DA-1220. pink-white medium-grained porphyritic quartz monzodiorite (Questa NM, 1.8 GA) (A=28; Q=11; P=61)
- DA-1221. Alkali feldspar syenite (A=99;P=1;Q=0) (Larvakite with labradorescence in orthoclase) (Larvik, Norway)
- DA-1222. Alkali Feldspar Granite (A=72;Q=28;P=0)
- DA-1223. Quartz Monzodiorite
- DA-1224. Red medium-grained muscovite biotite quartz alkali feldspar syenite, Estes Park CO (Precambrian) (A=94; Q=6; P=0)
- DA-1225. Syenite (Knob Lick quarry, MO; Precambrian basement)
- DA-1226. Hbl. quartz syenite (A=56; Q=19; P=25) (Elephant Rocks S.P., MO; Precambrian basement)
- DA-1227. Granite
- DA-1228. Granite, Pike's Peak, Colorado; Precambrian
- DA-1229. Granite, Stone Mt. GA; (281-325Ma)
- DA-1230. Granite
- DA-1231. Aplitic Granite, Llano Uplift, TX [1.03 Ga]
- DA-1232. Rapakivi Granite
- DA-1233. Granite

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DA-1234. Granite
DA-1235. Granodiorite
DA-1236. Biotite Granite
DA-1237. Pegmatite
DA-1238. Charnokite (India) [Proterozoic]
DA-1239. Pegmatite
DA-1240. Quartz Monzonite

(Intermediate extrusive rocks)

DA-1301. Porphyritic Andesite
DA-1302. Andesite Porphyry
DA-1303. Hornblende Andesite Porphyry
DA-1304. Hornblende Porphyritic Dacite, Taos Ski Valley, New Mexico, Tertiary
DA-1305. Andesite Porphyry
DA-1306. Quartz Latite
DA-1307. Porphyritic Andesite (showing prophyllitization)
DA-1308. Hornblende Plagioclase Andesite Porphyry (contains epidote and aegirine)
DA-1309. Hornblende Plagioclase Andesite Porphyry (Sangre De Cristo Range, Taos Ski Valley, New Mexico; Tertiary)
DA-1310. Plagioclase Dacite Porphyry (Rio Grande Gorge, Taos, New Mexico; Tertiary)
DA-1311. Hornblende K-feldspar Dacite Porphyry altered by pyrophyllitic mineralization, Questa, New Mexico, Tertiary
DA-1312. Plagioclase Andesite Porphyry, Uspallata, Argentina, Triassic
DA-1313. Hornblende Porphyritic Andesite
DA-1314. Andesite Porphyry
DA1315. Andesite Porphyry

(Intermediate intrusive rocks)

DA-1401. Hypersthene Quartz Diorite (Alpine, San Diego Co., CA; Cretaceous)
DA-1402. Biotite Diorite
DA-1403. Porphyritic Granodiorite (Hondo Canyon, Taos Ski Valley, New Mexico; Precambrian)
DA-1404. Quartz Monzonite Porphyry with Rapakivi feldspar phenocrysts (Taos Ski Valley, New Mexico; Precambrian)
DA-1405. Quartz Monzonite (Tetford Mines, Ontario; Precambrian)
DA-1406. Hornblende Biotite Diorite (Alexander City, Alabama; Ordovician [480ma])
DA-1407. Biotite Granodiorite
DA-1408. Ganodiorite
DA-1424. Quartz Monzonite
DA-1425. Tonalite (Elkahatchee Quartz Diorite, Tallapoosa Co. AL, 480Ma)

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DA-1426. Diorite
DA-1427. Diorite

(Mafic extrusive rocks)

DA-1501. Basalt
DA-1502. Olivine Basalt
DA-1503. Plagioclase Basalt Porphyry
DA-1504. Scoraceous Basalt Porphyry (San Antonio Mt., Taos Co., NM)
DA-1505. Vesicular Porphyritic Olivine Basalt (Rio Grande Gorge, Taos NM [Quaternary])
DA-1506. Diabase (Palisades Sill, Hudson River)
DA-1507. Plagioclase Basalt Porphyry
DA-1508. Plagioclase Porphyritic Basalt
DA-1509. Biotite Lamprophyre, Spanish Peaks, Colorado, Tertiary
DA-1510. Olivine Biotite Gabbro, Spanish Peaks, Colorado, Tertiary
DA-1511. Basalt (Rio Grande Gorge, Pilar, New Mexico, Quaternary)
DA-1512. Basalt (Lake Taupo, New Zealand)
DA-1513. Scoria (Hawaii)

(Mafic intrusive/Ultramafic rocks)

DA-1601. Olivine Kimberlite Porphyry
DA-1602. Gabbro
DA-1603. black coarse-grained Websterite
DA-1604. Green-black coarse-grained olivine websterite (Ol=15; Opx=70; Cpx=15)
DA-1605. Gray medium-grained biotite quartz diorite (Q=18; P=76; A=6)
DA-1606. Serpentinite
DA-1607. Anorthosite
DA-1608. Pyroxenite (Hypersthene)
DA-1609. Opx Gabbro
DA-1610. Porphyritic Peridotite
DA-1611. Picrite
DA-1612. Hazburgite
DA-1613. Anorthosite (White Face Mountain, Adirondacks, New York)
DA-1614. Peridotite(?) (Tablelands ophiolite of Gros Morne Park, Newfoundland)
DA-1615. Gabbro
DA-1616. Pyroxene anorthosite (Lake Placid, NY, Precambrian)
DA-1617. Dark-gray coarse-grained norite (P=65; Opx=35; Cpx=0)
DA-1618. Eclogite
DA-1619. Peridotite (Montana [Precambrian])
DA-1620. Gabbro
DA-1621. Gabbro, Duluth MN [Precambrian]

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DA-1622. Olivine Gabbro
DA-1623. Anorthosite
DA-1624. Dunite
DA-1625. Peridotite
DA-1626. Pyroxenite
DA-1627. Gabbro
DA-1628. Carbonatite
DA-1629. Anorthosite
DA-1630. Gabbro
DA-1631. Diabase
DA-1632. Olivine Biotite Gabbro (Lamprophyre) Spanish Peaks CO [T]

(Foliated metamorphic rocks)

DA-2101. Gneiss
DA-2102. Schist
DA-2103. Graphitic Slate (Delta, PA)
DA-2104. Crenulated Phyllite (Delta, PA)
DA-2105. Micaceous Quartzite (Philadelphia, PA)
DA-2106. Granitic Gneiss (Lake of the Woods, Ontario)
DA-2107. Slate
DA-2108. Slate (Pawlet, Rutland Co., VT; Cambrian- Mettawee Fm.)
DA-2109. Crenulated Chlorite Phyllite (Murphy Belt, Western Blue Ridge, NW Georgia)
DA-2110. Graphite Schist
DA-2111. Chlorite Tremolite Schist
DA-2112. Amphibolite (Higgins Ferry Group, Mitchell Dam Amphibolite, Alabama State Highway 22 road cut; Late Proterozoic rift basalt protolith; 366Ma K-Ar uplift date)
DA-2113. Mylonite (Millerville, AL; Hollins Line Fault)
DA-2114. Gneiss (North Shore, Lake Superior)
DA-2115. Amphibolite (Llano, TX; Precambrian)
DA-2116. Mylonite (Weogufka, AL; Hollins Line Fault)
DA-2117. Gneiss (tonalite composition) cross-cut by foliated trondhjemite (Alex City, AL; Ordovician [480 ma])
DA-2118. Biotite Schist
DA-2119. Quartzite with minor Schist
DA-2120. Gneiss
DA-2121. Pencil Gneiss (mylonitic; Auburn, AL)
DA-2122. Serpentinite (foliated; Precambrian; Willow City, TX)
DA-2123. Phyllite (Gettysburg, PA)
DA-2124. Slate (Gettysburg, PA)
DA-2125. Schist

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- DA-2126. Mylonite (Weogufka, AL; Hollins Line Fault)
- DA-2127. Granulite (Adirondacks, New York [Grenville 1.2 Ga])
- DA-2128. Garnet Staurolite Schist (Copper Hill, Taos, NM; Proterozoic)
- DA-2129. Garnet Biotite Staurolite Schist
- DA-2130. Andalusite Quartzite (Copper Hill, Picuris Mts., Taos, New Mexico, Proterozoic)
- DA-2131. Garnet schist (Murphy Belt, northern Georgia Blue Ridge, mid-Paleozoic)
- DA-2132. Garnet Chloritoid Staurolite Schist (Rinconada Formation, Copper Hill, New Mexico; Precambrian; 1.8Ga)
- DA-2133. Garnet Phyllonite (Pilar Formation, Copper Hill, New Mexico; Precambrian)
- DA-2134. Graphitic Phyllite (Cheaha Quartzite Formation, Lower Devonian, Cheaha Mt. State Park, Alabama)
- DA-2135. Staurolite Garnet Graphitic Schist (Phyllonite) (Pilar Formation, Picuris Mts., New Mexico, Proterozoic 1.8Ga)
- DA-2136. Malachite Andalusite Quartzite (Copper Hill Mine, Picuris Mts., New Mexico, Proterozoic)
- DA-2137. Migmatite Gneiss
- DA-2138. Chlorite schist
- DA-2139. Tourmaline schist
- DA-2140. Garnet chlorite schist
- DA-2141. Andalusite Schist (Copper Hill, New Mexico; Proterozoic Vadito Group; 1.8Ga)
- DA-2142. Staurolite garnet schist
- DA-2143. Granitic gneiss (Red River, NM, Precambrian)
- DA-2144. Foliated granite (Red River, NM, Precambrian)
- DA-2145. Andalusite schist (Dixon, NM, Precambrian Marquenas Fm.)
- DA-2146. Chlorite talc schist.
- DA-2147. Phyllite
- DA-2148. Kyanite schist (massive kyanite, Hollins, AL; Late Proterozoic)
- DA-2149. Graphitic phyllite
- DA-2150. Glaucophanite schist, Franciscan terrane CA, Cretaceous
- DA-2151. Greenstone, Franciscan terrane CA, Cretaceous
- DA-2152A. Mylonite (Brevard Fault Zone, Atlanta GA; K-Ar 361Ma)
- DA-2152B. Garnet Blastomylonite (Brevard Fault Zone, Atlanta GA; K-Ar 361Ma)
- DA-2153. Garnet schist (Franz Joseph, New Zealand)
- DA-2154. Blue schist (Franz Joseph, New Zealand)
- DA-2155. Greenstone (?) (Franz Joseph, New Zealand)
- DA-2156. Corbin K-Feldspar Gneiss (Red Top Mt. State Park, GA; 1.1Ga)
- DA-2157. Mylonite, Brevard Zone, Atlanta GA (360Ma metamorphic age)
- DA-2158. Garnet staurolite schist, Murphy Belt, North Georgia (Siluro-Devonian Brasstown Fm.)
- DA-2159. Garnet graphite phyllonite, Pilar Formation, Dixon NM (1.8Ga)
- DA-2160. Garnet gneiss (Murphy Belt, Tate GA, Brasstown Fm., S-D)

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- DA-2161. Black Slate, Meguma Terrane, Nova Scotia Canada [Late Proterozoic]
- DA-2162. Phyllite (Cheaha State Park, AL [S-D])
- DA-2163. Calc-Silicate gneiss (Di+Wo+Idocrase+Cc) , Honey Fm., Llano Uplift TX (1.3 Ga)
- DA-2164. Serpentinite
- DA-2165. Granite Gneiss
- DA-2166. Garnet Biotite Schist
- DA-2167. Tourmaline Schist
- DA-2168. Hematite Schist

(Non-foliated metamorphic rocks)

- DA-2201. Wollastonite Skarn (Llano, TX; Precambrian)
- DA-2202. Quartzite (Cheaha State Park, Alabama; Siluro-Devonian)
- DA-2203. Metaconglomerate (Cheaha State Park, Alabama; Siluro-Devonian)
- DA-2204. Cordierite Hornfels
- DA-2205. Serpentinite
- DA-2206. Garnet Epidote Wollastonite Skarn
- DA-2207. Phlogopite-bearing Marble
- DA-2208. Marble (Walsenburg, Colorado; Precambrian)
- DA-2209. Andalusite Quartzite (Vadito Group, Copper Hill, New Mexico; Precambrian)
- DA-2210. Malachite Quartzite (Ortega Quartzite Formation, Copper Hill, New Mexico; Precambrian)
- DA-2211. Stretch-pebble Metaconglomerate (Cheaha Quartzite Formation, Bull Gap near Sylacauga, Alabama; Siluro-Devonian)
- DA-2212. Hornfels
- DA-2213. Greenstone (Millerville, AL., Siluro-Devonian)
- DA-2214. Quartzite
- DA-2215. Marble
- DA-2216. Marble (Murphy Marble quarry near Jasper, GA; Cambro-Ordovician)
- DA-2217. Greenstone
- DA-2218. Skarn (Ga+Di+Wo) Adirondacks NY
- DA-2219. Garnet Granulite (Adirondacks, New York; Grenville front 1.2 Ga)
- DA-2221. Red Marble
- DA-2222. Valley Spring Orthogneiss (metavolcanic) (Llano Uplift Grenville Basement; Llano TX; 1.2 Ga)
- DA-2223. Eclogite

(Clastic sedimentary rocks)

- DA-3001. Arkose (Flechado Sandstone, Sipapu, NM, Mississippian)
- DA-3002. Hematite-cemented Sandstone, Dingle Peninsula, Ireland (Devonian "old red sandstone")
- DA-3003. Limestone, Estes Park CO (Mississippian)

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- DA-3004. Feldspathic Sandstone (Arkose) Estes Park CO (Tertiary)
- DA-3005. Abyssal plain chert, Franciscan terrane CA; Cretaceous
- DA-3006. Siltstone (Napier, New Zealand)
- DA-3007. Siltstone (Bay of Islands, New Zealand)

(Chemical/Biochemical Sedimentary Rocks)

- DA-3600. Micritic Limestone (Ringgold Gap, Georgia, middle Ordovician)
- DA-3601. Fossiliferous Limestone (Ringgold Gap, Georgia, middle Ordovician)

L-Series (Southern Rockies)

- L2. Perlite (Glassy) (Sandoval Co., NM)
- L3. Andesite Porphyry
- L5. Gabbro
- L6. green-to-black medium-grained websterite (Ol=5; Opx=55; Cpx=40)
- L7. Porphyritic Rhyolite
- L9. Syenite
- L10. K-feldspar Rhyolite Porphyry
- L12. Metaconglomerate
- L14. Gabbro
- L18. Hornblende Nepheline Syenite
- L19. Porphyritic Basalt
- L23. Amphibolite
- L25. Biotite Quartz Diorite
- L26. Alkali Syenite
- L27. Gabbro
- L28. Gabbro (displays excellent plagioclase twinning/striations)

LA-series (Llano Uplift)

- LA-17B. Aplite

MI-series

- MI-1543. Garnet Phlogopite Skarn
- MI-2942. Skarn

PP-series Panoche Pass, CA

- PP-1. Chert containing dark riebeckite. SW1/4, NW1/4, sec. 2, T15S, R8E. In creek bed just south of road and west of bridge that is just west of entrance to Mr. Root's farm.
- PP-2. Blue schist. Roadcut just above locality #1.
- PP-3. Green jadeite-bearing rock. Roadcut above locality #1.
- PP-4. Blueschist outcrop in stream bed, same locality as #1.
- PP-5. Coarse-grained hornblendite (some specimens have a few garnets). NE1/4, SE1/4, sec. 5,

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- T15S, R8E. In creek bed on south side of Jones farmhouse.
PP-6. Thin-bedded graywacke and chert. Cut on north side of road. 0.25 mi. west of bridge near Root farm. NE1/4, SW1/4, sec. 2, T15S, R8E.
PP-7. Reddish chert and shale. Cut on north side of road 8.85 mi. west of bridge near Root farm. Center of the western edge of SW1/4, sec. 2, T15S, R8E.
PP-8. Albitic graywacke. Cut on south side of road 1 mile east of bridge near Root farm. Center of northern edge of SW1/4, sec. 1, T15S, R8E.
PP-9. Slightly metamorphosed graywacke. Cut on north side of road 0.1 mi. west of the Miller bridge. NW1/4, NW1/4, sec. 4, T15S, R8E.
PP-10. Metagraywacke. Cut on north side of road 0.5 mi. west of the Miller bridge, on opposite side of road turnout. Center of NW1/4, sec. 4, T15S, R8E.
PP-11. Serepntinite. 0.1 mi. west of locality for #10, 0.6 mi. west of the Miller bridge.
PP-12. Altered basalt-greenstone. Just west of the center of the eastern boundary of section 5, T15S, R8E. 1.0 mi. west of the Miller bridge.
PP-13. Banded amphibolite (exotic block). Same locality as specimen #5.
PP-14. Blueschist. Roadcut on north side of road, 1.2 mi. west of the Miller bridge. NE1/4, SE1/4, sec. 5, T15S, R8E.
PP-15. Eclogite (exotic block). Same locality as specimen #5.
PP-16. Garnet-bearing blueschist (exotic block), same locality as specimen #5.
PP-17. Thinly banded blueschist. From outcrop in creek bed along the graded road. Near center of SW1/4, sec. 29, T14S, R8E.
PP-18. Dense serpentine. From prominent outcrop up the hill to the west of specimen #17.
PP-19. Dense blueschist. Same locality as specimen #5.
PP-20. Coarse lawsonite-bearing blueschist. Same locality as specimen #17.

R103. Feldspathic Schist
R107. Garnet Amphibolite

RI1021. Obsidian
RI1022. Obsidian
RI1025. Quartz Diorite
RI1029. gray-white fine-grained hbl. Granite
RI1030. Diorite
RI1075. Biotite Diorite
RI1077. Hornblende Plagioclase Andesite Porphyry
RI1082. Quartz Monzonite
RI1089. Vesicular Olivine Pyroxene Porphyritic Basalt
RI1119. Rhyolite tuff
RI1148. Olivine Plagioclase Basalt Porphyry
RI1149. Quartz Monzonite
RI1154. Hornblende Dacite Porphyry

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RI1156. Sodalite Phonolite Porphyry
RI1184. Olivine Cpx. Norite
RI1188. Garnet Wollastonite Skarn
RI1189. Garnet Phlogopite Skarn
RI1191. Hornblende pegmatite
RI1208. Marble
RI1209. Diorite
RI1228. Granite
RI1269. Olivine Plagioclase Porphyritic Basalt
RI1270. Basalt porphyry
RI1319. Marble
RI1351. Scoraceous Basalt
RI1378. Olivine Basalt
RI1513. Rhyolite
RI1546. Amphibolite
RI1562. Calc-silicate gneiss
RI1570. Pyroxenite
RI1607. Augen Gneiss
RI1618. Gabbro
RI1645. Garnet Mica Schist
RI1695. Schist
RI1715. Amphibolite
RI1761. Marble
RI1799. Hornblende schist
RI1867. Amphibolite
RI1958. Pegmatite
RI2003. Dacite
RI2081. Light-to-dark-green medium-grained dunite (Ol=93; Opx=7; Cpx=0)
RI2098. Hornblende Syenite
RI2121. Tourmaline Pegmatite
RI2123. Garnet Wollastonite Skarn
RI2146. Dark-gray med.-grained Anorthosite
RI2207. Anorthosite
RI2238. Granite
RI2287. Gneiss
RI2291. Gneiss
RI2309. Slate
RI2332. Marble
RI2340. Chlorite Schist
RI2356. Porphyritic basalt
RI2358. Biotite Hornblende porphyritic Monzonite

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RI2359. Hornblende Dacite Porphyry
RI2400. black medium-grained cpx gabbro (P=40; Pyx=40; Ol=20)
RI2420. Olivine Gabbro
RI2430. Gabbro
RI2463. Pyroxenite
RI2470. Biotite Granodiorite
RI2476. Hornblende Plagioclase Andesite Porphyry
RI2548. Porphyritic Rhyolite
RI2608. Tourmaline schist
RI2745. Andesite
RI2766. Pegmatite
RI2768. Rhyolite
RI2790. Amphibolite
RI2928. Dunite
RI2915. Biotite Syenite
RI2941. Hornblende Diorite
RI2952. Biotite Granodiorite
RI2992. Syenite
RI3292. Tourmaline granite
RI3706. Basalt
RI3769. Greenstone
RI3832. White-black medium-grained hornblende diorite (A=0; Q=4; P=96)
RI3860. Websterite

RP-1. Granite

RP-5. Gabbro

S-series: Sudbury Suite, Ont. Canada

S-1. Gersdorffite (Ni ore), Creighton mine, Sudbury, Ontario (1.7Ga)
S-2. Pyrite-Chalcopyrite ore, Sudbury, Ontario (1.7Ga)
S-3. Olivine diabase (post-irruptive dike rock), Sudbury, Ontario (1.2Ga-900Ma?)
S-4. Norite, Sudbury, Ontario (Ni irruptive) (1.7Ga)
S-5. Greenstone, Elsie Mt., Sudbury, Ontario (2.5Ga) (Pre-Huronian metavolcanic)
S-6. Pentlandite ore, Creighton mine, Sudbury, Ontario (1.7Ga ?)
S-7. Transition zone Nickel irruptive, Sudbury, Ontario (1.7Ga)
S-8. Levack Granite, (pre-Huronian extra-basinal rocks, 2.5Ga Archean), Sudbury, Ontario
S-9.
S-10. Pyrite crystals, Errington mine, Sudbury, Ontario (1.7Ga)
S-11. Onaping Tuff, Onaping Fm., Sudbury Basin, Ontario (1.7Ga)
S-12.
S-13.

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- S-14. Pyrrhotite-pentlandite Ni ore, Creighton Mine, Sudbury, Ontario (1.7Ga)
- S-15. Copper Cliff rhyolite, pre-Huronian volcanics, Sudbury basin, Ontario (Archean ?)
- S-16. Micropegmatite, Nickel irruptive, Sudbury basin, Ontario (1.7Ga)
- S-17.

S-series: southern Rockies

- S-1. Plagioclase Basalt Porphyry
- S-2. Hornblende Syenite
- S-3. Biotite Nepheline Syenite
- S-4. Gabbro (Ca-plagioclase + Augite)
- S-7. Pyroxenite
- S-8. Hornblende Granite
- S-10. Biotite Porphyritic Andesite
- S-12. Metadacite
- S-13. Slate
- S-16. Hornfels
- S-17. Hornblende Syenite
- S-18. Basalt
- S-20. Charnockite
- S-21. Alkali-Feldspar Trachyte Porphyry
- S-22. Hornblende Granodiorite
- S-22A. Hornblende Granodiorite
- S-23. Hornblende Nepheline Syenite

SG samples from the Slieve Gullion Tertiary Complex and Giant's Causeway, Northern Ireland

- SG-2. Basalt
- SG-3. Granodiorite
- SG-4. Hypersthene Dolerite
- SG-5. Hypersthene Dolerite
- SG-6. Volcanic Breccia
- SG-7. Porphyritic Granophyre
- SG-8. Porphyritic Granophyre
- SG-9. Granophyric Dolerite
- SG-10. Granodiorite
- SG-11. White Quartz Gabbro
- SG-12. Granophyre
- SG-13. Gabbro
- SG-14. White Gabbro
- SG-15. Gabbro

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SK8. Basalt
SK22. Nepheline Syenite

SN18. Diorite
SN21. Granite
SN26. Diorite
SN33. Quartz Monzonite
SN35. Hornblende Granite
SN38. Nepheline syenite

TK-1A. Pink-gray coarse-grained Granite (France, Hercynian) (A=33; Q=33; P=33)

W1. Obsidian
W2. Scoria
W3. Pumice
W4. Tuff
W5. Aporhyolite
W6. Rhyolite
W7. Rhyolite
W8. Porphyritic Rhyolite
W9. Plagioclase porphyritic Basalt
W10. Porphyritic Biotite Granite
W11. Biotite Granite
W12. Muscovite Biotite Granite
W13. Alkali Granite
W14. Hornblende Syenite
W15. Pegmatite
W16. Aplite
W17. Trachyte
W18. Hornblende Syenite
W19. Hornblende Syenite
W20. Porphyritic Hornblende Alkali Trachyte
W21. Phonolite
W22. Nepheline Syenite
W23. Nepheline Sodalite Syenite (Coarse-grained green-gray hornblende foid monzosyenite)
(A=69; F=19; P=12)
W24. Monzonite
W25. Quartz Monzonite Porphyry
W26. Granodiorite
W27. Mica Dacite Porphyry
W28. Andesite Breccia

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- W29. Hornblende Andesite
- W30. Rhyolite Porphyry (K-feld. phenocrysts)
- W31. Diorite
- W32. Andesite Porphyry
- W33. Vesicular Basalt
- W34. K-feld. Quartz Rhyolite Porphyry
- W35. Basalt
- W36. Olivine Basalt Porphyry
- W37. Diabase
- W38. Diabase Porphyry
- W39. Gabbro
- W40. Olivine Websterite

- W41. Gabbro
- W42. dark-gray medium-grained Anorthosite (P=93; Opx=3; Cpx=4)
- W43. yellow-green to black medium-grained olivine websterite (Ol=16; Opx=63; Cpx= 21)
- W44. Dunite
- W45. Phlogopite Olivine Kimberlite Porphyry
- W46. Porphyritic basalt
- W47. Limestone Breccia
- W48. Quartz Conglomerate
- W49. Quartz Conglomerate
- W50. Limestone Conglomerate Breccia
- W51. Calcareous Shale
- W52. Carbonaceous Shale
- W53. Arenaceous Shale
- W54. Carbonaceous Shale
- W55. Oil Shale
- W56. Volcanic Ash Shale
- W57. Diatomaceous Earth
- W58. Gray Sandstone
- W59. Red Sandstone
- W60. Brownstone
- W61. Greywacke
- W62. Arkose
- W63. Argillaceous Sandstone
- W64. Glauconitic Sandstone
- W65. Fossiliferous Limestone
- W66. Encrinal Limestone
- W67. Chalk

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W68. Marble (Tennessee)
W69. Argillaceous Limestone
W70. Gray Limestone
W71. Cherty Limestone
W72. öölitic Limestone
W73. Calcareous
W74. Dolomitic Limestone
W75. Gypsum
W76. öölitic Iron Ore
W77. Siliceous oolite
W78. Chert
W79. Biotite Gneiss
W80. Sillimanite Garnet Gneiss
W81. Hornblende Gneiss
W82. Hornblende Granite
W83. Mica Schist
W84. Garnetiferous Mica Schist
W85. Phyllite
W86. Hornblende Schist
W87. Chlorite Schist
W88. Talc Schist
W89. Tourmaline Mica Schist
W90. Quartz Sericite Schist
W91. Red Slate
W92. Gray Slate
W93. Quartzite
W94. Quartzite
W95. White Marble
W96. Pink Marble
W97. Dolomitic Marble
W98. Verd Antique
W99. Serpentine
W100. Soapstone
W101. Granite Pegmatite
W102. Argillite
W103. Quartz Diorite
W104. Green Lapilli Tuff
W105. Kimberlite
W106. Ijolite
W107. Amphibole
W108. Glauconitic Sandstone

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- W301. Serpentine (Serpentinite)
 - W302. Sanadine Andesite Porphyry
 - W304. Glaucophane schist
 - W308. Garnet Quartzite
 - W324. Magnetite Ore
 - W330. Chlorite Schist
 - W333. Pegmatite
 - W334. Dunit (olivine)
 - W337. Pyroxenite (Hedenbergite, Butte, Montana)
 - W338. K-feldspar porphyritic Latite
 - W340. Opx Gabbro
 - W342. Anorthosite
 - W346. Quartz
 - W353. Anorthosite
 - W356. Marble
 - W360. Serpentinite
 - W363. Black coarse-grained olivine websterite (Ol=11; Opx=79; Cpx=10)
 - W365. Orthopyroxenite (Enstatite)
 - W370. Chlorotoid Schist
- 47E7969. Gray-pink medium-grained hornblende Alkali-Feldspar Syenite (A=94; F=0; P=6)

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EUROPEAN ROCK SUITE

The Specimens in this Suite were Collected
Under the Direct Supervision
of
Dr. Forbes Robertson, Professor of Geology
Principia College
Elsah, Illinois, 62028

SLIEVE GULLION TERTIARY COMPLEX AND GIANT'S CAUSEWAY,
NORTHERN IRELAND

Reference: Reynolds, Doris L., The Geology of Slieve Gullion, Foughill and Carrickeanan: An Actualistic Interpretation of a Tertiary Gabbro-granophyre Complex: Trans. Roy. Soc. Edin., v. 62, Part I, 1950-1. With colored map.

Location of Specimens: (Slieve Gullion 3 - 16) rel. to Reynolds Map.

SG-1. Giant's Causeway. Small piece.

SG-2. Basalt, Antrim, 3 mi. W. of Ballycastle Center, SE of Causeway.

SG-3. Newry Granodiorite., within ring complex of Slieve Gullion, 2.6 mi. N. of Forkill.

SG-4. Hypersthene dolerite, Hughes Quarry

SG-5. Hypersthene dolerite, small quarry 1/4 mi. SW of Hughes Quarry.

SG-6. Breccia from N. part of ring dike complex, 0.6 mi. SW of Quarry at Lislea.

SG-7. Porphyritic granophyre of the ring structure, SW of Lislea.

SG-8. Porphyritic granophyre inside ring structure, Lislea Quarry.

SG-9. Granophyric dolerite, quarry at "d" about 1/8 mi. SE Adavoyle Sta.

SG-10. Granodiorite blocks in, same quarry as 9.

SG-11. White quartz gabbro (?) N. end of Carricharnan Hill.

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SG-12. Granophyre, N end of Carricharnan Hill.

SG-13. Gabbro, quarry SW of Reservoir, NE side of Slieve Gullion.

SG-14. White Gabbro, small quarry NW of Reservoir

SG-15. Gabbro, main country rock at quarry NW of Reservoir, same quarry where specimen 14 obtained. This specimen is small, and collected to show the dominant rock type at the quarry. Specimen 14 occurs in blocks within the quarry and has a strong megascopic resemblance to granophyre. It is a very local facies of gabbro, no hint of a "layer" and certainly but a minor fraction of the rock which is found in the quarry.

SG-16. Rhyolite, ignimbrite. From ring complex at S end, 1/2 mi. E. of Forkhill.

Terminology taken from the mapped units of Dr. Reynolds, for the most part. * indicates specimen taken from same locality as that represented by a chemical analysis.

Chemical Analyses:

	1a	1b	4	5	8
SiO ₂	50.36	50.71	49.16	49.87	76.68
Al ₂ O ₃	14.51	14.66	14.04	14.54	12.44
Fe ₂ O ₃	2.61	2.39	3.07	3.36	0.38
FeO	8.09	8.19	10.09	9.57	1.44
MgO	6.23	5.91	6.28	6.38	0.14
CaO	10.77	10.53	10.66	11.22	0.81
Na ₂ O	2.48	2.63	2.69	2.18	3.07
K ₂ O	0.99	0.89	0.58	0.85	5.59
H ₂ O+	1.10	1.22	1.13	0.63	0.24
H ₂ O-	1.27	0.94	0.22	0.20	0.07
CO ₂	0.10	0.66	-	-	0.02
TiO ₂	1.06	0.99	1.48	0.70	0.23
P ₂ O ₅	0.45	0.50	0.15	0.13	-
Cr ₂ O ₅	0.02				
S	0.06				
MnO	0.12	0.22	0.24	0.38	0.04
SrO	0.05				
BaO	0.03				
Total	100.37	99.88	99.78	100.01	100.19

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- 1a. A. Holmes, 1936, 91: Anal. I.C.I. A record of new analyses of tertiary Igneous Rocks: PRIA 43b, 89-94.
- 1b. S.E. Tomkeieff, 1950. The basalt lavas of the Giants Causeway district of Northern Ireland: Bull. V, ser. 2.
- 4. D. L. Reynolds (see reference) #2 p. 97.
- 5. do. #1 p. 97.
- 8. do. #17 P. 111.

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