

- LIST OF METAMORPHIC-TECTONIC ELEMENTS**
- YORK TERRANE** – Late Proterozoic (?) and Paleozoic sedimentary and metasedimentary rocks and minor Late Cretaceous tin-bearing granites, dominantly carbonate and siliciclastic lithologies, in which primary features are generally retained; fine-grained metasedimentary rocks are weakly foliated. Metamorphic and thermal history variable from unit to unit, and generally lower grade than Nome Complex. Tin granites intruded in shallow crustal settings. The generally brittle shallow and steeply-dipping structures in the area may have formed in shallow contractional settings, extensional settings, or both.
 - NOME COMPLEX** – Late Proterozoic and Paleozoic metasedimentary and metaigneous rocks, metamorphosed during the Jurassic
 - Nome Complex, west-central** – Weakly foliated metasedimentary and unfoliated metaigneous rocks that retain relict primary features; mineral assemblages in mafic rocks formed at pumpellyite-actinolite, greenschist, and blueschist facies (one locality)
 - Nome Complex, eastern** – Penetratively deformed and recrystallized schists with ductile fabrics; protolith packages and metamorphic facies identical to Nome Complex in central Seward Peninsula; mineral assemblages in most of the area are characteristic of greenschist facies, but slightly higher grade assemblages occur in the vicinity of Kiwalk Mountain. Lack of high pressure metamorphic minerals may be significant or a product of poor exposure and limited sampling. Metamorphic history of this block may not be consistent throughout and the block may be cut by unrecognized faults
 - Nome Complex, central** – Penetratively deformed and recrystallized schists with ductile fabrics; mineral assemblages record a blueschist-facies event that traversed lawsonite-stable conditions and peaked at epidote-stable conditions; one eclogite-facies assemblage, blueschist-facies assemblages are variably overprinted by greenschist facies assemblages
 - Nome Complex, northern** – Weakly foliated metasedimentary and unfoliated metaigneous rocks; mineral assemblages in small metagabbro bodies are variable; some show weak greenschist-facies overprint, others show pervasive stauite overgrowth of greenschist-facies minerals over igneous minerals; one contains pseudomorphs after blue amphibole

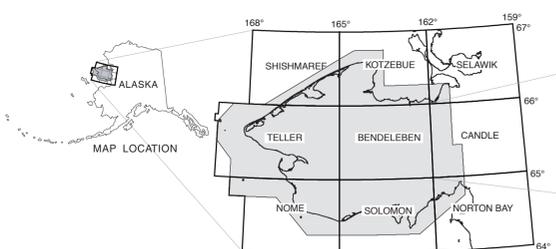
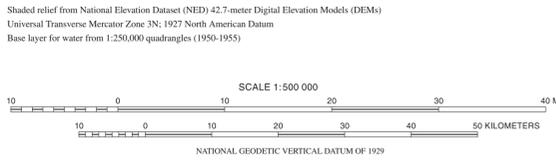
- HIGH GRADE METAMORPHIC AND ASSOCIATED IGNEOUS ROCKS** – Amphibolite and granulite-facies metamorphic rocks and associated Cretaceous plutons; penetratively deformed metasedimentary and metaigneous schist and gneiss with complex metamorphic histories; aluminum-rich lithologies show early development of kyanite-stable mineral assemblages succeeded by sillimanite-stable, lower-pressure assemblages. Lithologies rich in iron and aluminum retain early, relatively high pressure aluminosilicate plus orthoamphibole assemblages (>5kb) that are overprinted by relatively lower pressure cordierite plus staurolite or garnet assemblages (<5kb). Timing of peak metamorphism and exhumation may not be the same in Kigluak, Bendeleben, and Darby mountain ranges. Kigluak and Bendeleben ranges formed in the Tertiary and are bounded by active faults
- GRANTLEY HARBOR FAULT ZONE** – Weakly metamorphosed metasedimentary rocks with stronger deformational fabrics than those in the western Seward Peninsula, but weaker deformational fabrics than the Nome Complex. Primary sedimentary features locally preserved
- ANGAYUCHIAM TERRANE** – Mafic, ultramafic, and tonalitic rocks juxtaposed along a series of vertical faults with minor slivers of Nome Complex carbonate rocks; mafic rocks are volumetrically dominant, contain blueschist and albite-epidote-amphibolite facies metamorphic assemblages, and exhibit weakly foliated to mylonitic fabrics
- CONGLOMERATE AND SANDSTONE** – Unmetamorphosed Cretaceous (?) carbonate-clast conglomerate and sandstone, likely related to marine sedimentary rocks of the Yukon-Koyukuk basin; Tertiary (?) sandstone and coal
- YUKON-KOYUKUK BASIN** – Folded and faulted Mesozoic volcanic and marine sedimentary rocks and associated plutons
- CEANOZOIC VOLCANIC ROCKS** – Basalt cinder cones, flows, and large maar volcanoes with associated pyroclastic rocks
- KUGRUK FAULT ZONE**

- METAMORPHIC MINERAL KEY**
- ▲ Lawsonite
 - ▲ Pseudomorph after lawsonite
 - Glaucophane
 - Glaucophane and pseudomorph after lawsonite
 - Pseudomorph after glaucophane
 - Pseudomorph after glaucophane and pseudomorph after lawsonite
 - Crossite or glaucophane
 - Crossite or glaucophane and lawsonite
 - ★ Eclogite
 - Aluminous rock with mineral assemblage that contains relicts of the reaction aluminosilicate + orthoamphibole = cordierite + garnet or staurolite (decrease in pressure)
 - Aluminous rock with mineral assemblage that contains relicts of the reaction orthoamphibole + kyanite = cordierite + garnet or staurolite (decrease in pressure)
 - Pelitic rock crystallized at temperatures above the second sillimanite isograd and aluminous rock with mineral assemblage that contains relicts of the reaction aluminosilicate + orthoamphibole = cordierite + garnet or staurolite (decrease in pressure)
 - Pelitic rock crystallized at temperatures above the second sillimanite isograd
 - Kyanite
 - Andalusite
 - Approximate position of second sillimanite isograd; teeth towards higher-grade rocks

- CONODONT COLOR ALTERATION INDEX (CAI) VALUES**
[See appendix, including tables A-1 and A-2 in pamphlet, for more information]
- Not determined
 - 1.5 - 2.5
 - Minimum 1.5 - 2.5 and maximum 3.0 - 3.5
 - 3.0 - 3.5
 - Minimum 1.5 - 2.5 and maximum 4.0 - 4.5
 - Minimum 3.0 - 3.5 and maximum 4.0 - 4.5
 - 4.0 - 4.5
 - 5.0 - 5.5
 - Minimum 5.0 - 5.5 and maximum 6.0 - 6.5
 - 6.0 - 6.5
 - Minimum 5.0 - 5.5 and maximum 7.0 - 8.0
 - Minimum 6.0 - 6.5 and maximum 7.0 - 8.0
 - 7.0 - 8.0

- MAP SYMBOLS**
- +¹ K-Ar, ⁴⁰Ar/³⁹Ar and Rb-Sr sample location; see table 2 for age data
 - +¹ U-Pb zircon sample location; see table 3 for age data
 - △ Mountain
 - 1:250,000-scale quadrangle boundary
 - Contact – Depositional, intrusive, or metamorphic, as shown on sheet 1
 - Fault – Dotted where concealed, as shown on sheet 1
 - Contact – Metamorphic-tectonic elements
 - Major fault or tectonic subdivision boundary – Dashed where concealed or approximately located
 - Road

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Tectonic, metamorphic, and geographic data for the Seward Peninsula, Alaska

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